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ABSTRACT

This document summarizes and presents materials produced during a qualitative international study of the role of transformative learning in achieving sustainable societies and global responsibility that included the following activities: case studies of experiences with transformative learning in seven countries; international survey and workshop; and establishment of an electronic computer-based network for administration of the project. The document begins with an overview of the project's objectives, methodology, and findings. Presented next are the following case study and working reports: "Transformative Learning through Environmental Action: Berlin and Brandenburg as Centers of Environmental Activism, Organic Food Consumption and Organic Gardening and Farming" (Elisabeth Meyer-Renschhausen); "Case Study from Sudan-Africa" (Naila Babiker Hijazi); "Case Study Brazil: Women in Citizen's Action: In the Struggle against Hunger and Poverty and in Defense of Life" (Morma Viezzer and Teriza Moreira); "Transformative Learning in Marginal Areas of Indigenous Migrants in an Amazon City [Aprendizaje Transformativo en Areas Marginales de Migrantes Indigenas en Una Ciudad Amazonica]" (Geog Omar Ovalles); "People's Rights, Environmental Education and Ecological Action for Sustainability: El Salvador" (Marta Benavides); "Community-Based Rural Development Project as a Vehicle to Community Ownership, Empowerment and Cultural Recovery--A Draft Working Paper of the Case Study" (Jose Zarate); "'Navdanya'--A Grass Roots Movement to Conserve Biodiversity and Sustain Food Security" (Vanaja Ramprasad); "Transformative Learning: Contexts and Practices--A Working Paper" (Budd Hall, Ed Sullivan); "Gender, Transformative Learning, and Environmental Action" (Darlene Clover); and "Food for Thought and Sustenance" (Leesa Fawcett). Concluding the document are a 28-item reference list, a 99-item annotated bibliography, and the proceedings of the International Development Research Centre (IDRC) workshop. (MN)

TRANSFORMATIVE LEARNING THROUGH
ENVIRONMENTAL ACTION

ED 398 379

# AWAKENING SLEEPY KNOWLEDGE:
## TRANSFORMATIVE LEARNING IN ACTION

Final Report of the Transformative Learning Through
Environmental Action Project

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# Acknowledgements

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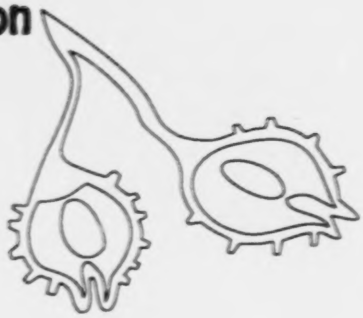
Project Coordinators: Darlene Clover, Leesa Fawcett, Budd Hall, Edmund O'Sullivan, Moema Viezzer

# Introduction



## An Overview of the Project

> Theory-the seeing of patterns, showing the forest as well as the trees-theory can be a dew that rises from the earth and collects in the rain cloud and returns to earth over and over. But if it doesn't smell of the earth, it isn't good for the earth.
>
> Adrienne Rich, "Notes Towards a Politics of Location" as quoted in Gaard, EcoFeminism: Women, Animals, Nature, 1993, p.1

> The two central shifts in thinking that are being induced by women's ecological struggles relate to economic and intellectual worth. The latter relates to our understanding of what constitutes knowledge, and who the knowers and producers of intellectual knowlege are.
>
> Vandana Shiva, Staying Alive,London, Zed Books 1989, p.224

> But at a deeper level of our being we find it hard to surpress the cry of anguish, the scream of horor-the wild words required to express wild realities. We homan beings are being led to a dead end...all too literally.
>
> Herman E. Daly and John B. Cobb, Jr. For the Common Good. Boston, Bacon Press, 1989 p. 21.

## INTRODUCTION

The overview is organized into seven sections: Background of the project, Context and Framework, Objectives, Methodology, Summary of Findings, Dissemination of Findings, and Conclusions. The Summary of Findings is itself broken down into five sub-headings: What has to be transformed, Principles of Transformative Learning, Practices of Transformative Learning, Indicators of Success, and the Role of Electronic Communications in the project. While this overview is comprehensive in noting major aspects of the study, it should not be read independly of the rest of the report. To do so would be to detract from the richness of the other material, the other ways of writing about and understanding this work and would diminish the more detailed reflections.

## 1. BACKGROUND

The ideas for this research project began in the shanty towns of Sao Paulo Brazil with the work of women who have been transforming their lives each day in order to survive and support their children. The ideas came from rural Kenya where elders have begun to speak about their ancient forms of knowledge which may now be needed to sustain life today. The ideas came from ordinary women and men in places like Canada and Germany turning towards organic farming and a life of less consumption. The core ideas of this project relate to how we learn the skills, perceptions and practices which allow us to transform our lives in new directions.

Learning to transform; transforming to learn...abstract ideas perhaps to scholars, but deeply rooted in the daily practices of many. The ideas from many places and perspectives were brought together for the purposes of this study by Moema Viezzer working from a women's NGO in Brazil, Darlene Clover, Budd Hall and Edmund O'Sullivan working at a Graduate Faculty of Education in Canada, dian marino and Leesa Fawcett working at a Faculty of Environmental Studies also in Canada. We were interested in documenting what we could about the nature and role of learning as it is found in locations of environmental action. The initial project was first formulated by Moema Viezzer, Darlene Clover, Budd Hall and dian marino as a contribution to and a way of following up on the Earth Summit in Rio de Janeiro in June of 1992. Hall, marino and Viezzer had been founders of the Environmental Education Network of the ICAE. Viezzer, as ICAE Environmental Education Network Coordinator and Clover as Environmental Liason Officer for the ICAE Secretariat in Toronto were working together in preparation of the main educational forum of the Earth Summit, the Journey of Education. Viezzer and her team in Brazil with support from Clover in Toronto were responsible for the 18 month process which resulted in the Citizen's Treaty on Education for Sustainable Societies and Global Responsibility. This treaty was debated and refined through a participatory process involving over 300 persons working in Rio de Janeiro under a tent for days.

The several years of networking in the international adult education community and the work relating to the Earth Summit process raised a number of questions:

1. How could the learning dimension of the environmental movement be strengthened?

2. What can be learned from environmental action campaigns about the ways in which learning takes place and can be most enhanced?

3. Which combinations of pedagogical practice hold out the most promise for transforming relations of power and perception?

Our concerns went beyond looking at environmental education in formal settings, although studies of that nature are most valuable. Our concerns went beyond our own experiences in popular and adult education, although we need more research on that work as well. Because of the overwhelming fact that those persons who have the power to transform the world in the short run are adults, we believe that more attention deserves to be paid to adult and public education in its many sites. Adult education is the fastest growing sector of education world wide in the 1990's, but environmental adult education represents a very small part of the overall picture.

The ICAE has been encouraging and supporting the development of the concept of 'popular education' since the early 1980's. The World Assemblies of Adult Education in Buenos Aires in 1985 and in Bangkok in 1990 brought the concept and practice to the attention of the world's adult education community. Popular education refers to a process of learning which begins with the concrete experiences of the learner, involves a high degree of participation, recognizes mutual learning, stresses the creation of new knowledge and is directed towards social, economic or other forms of justice and democracy. Research however about environmental adult, non-formal or popular education has been under-researched. As Hartmut

Schneider, editor of the 1992 OECD study Environmental Education: An Approach to Sustainable Development notes, "there is a descent from these heights (where environmental education has been considered as 'the key to sustainability')...to the place accorded environmental education in practice". The OECD study, the most comparable study done along these lines previously goes on to say that environmental education constitutes a learning process in which the entire society ought to become involved.

### Transformative Learning

We have chosen to use the term transformative learning, rather than popular education, environmental education or adult education because it is not already 'owned' by either formal or non-formal education interests and calls forth by its very naming, the need for and desirability of change. Transformative learning, as we have framed it in this study, refers to the process of learning, whether in formal or non-formal education settings which is linked to changing the root causes of environmental destruction or damage; changes in relations of power, gender relations and other patterns which allow for a healthy relationship with the earth. And as a means of deepening the analysis of this work, OISE has created a Centre for research and reflection about transformative learning named appropriately the Transformative Learning Centre or TLC.

## 2. CONTEXT AND FRAMEWORK

This study explores the role of learning in the context of sustainable societies and global responsibility. It is a study of the learning dimensions of environmental actions and campaigns. It is concerned with how to strengthen environmental education within the broader environmental movement and what can be learned for pedagogical and popular education purposes by the study of the learning dimensions within this movement. The study grew out of the groundbreaking work accomplished at the United Nations Conference on the Environment and Development and the Global NGO Forum in Rio de Janeiro in June of 1992. Specifically, the project grew out of the visionary work accomplished in the development and achievement of the "Treaty on Environmental Education for Sustainable Societies and Global Responsibility"(see appendix).

This treaty was part of the participatory process of the International Journey on Environmental Education which developed a worldwide consensus in a meeting of over 500 representatives from all over the globe. The final version of the Treaty was the culmination of a long process of discussion and revisions that took place between November 1991 and June 1992. From the preamble of the Treaty:

> This treaty, as in education, is a dynamic process and should therefore promote reflection, debate and amendments.
>
> We signatories, people from all parts of the globe, are devoted to protecting life on earth and recognize the central role of education in shaping values and social action. We commit ourselves to a process of educational transformation aimed at involving ourselves, our communities and nations in creating equitable and

sustainable societies. In so doing we seek to bring new hope to our small, troubled, but still beautiful planet.[1]

This treaty also outlined a course of action as a follow-up to take place over three year period.

In addition, the Treaty suggests that action be coordinated to support movements which are working for improving the quality of life and extending effective international solidarity while fostering links between NGOs and Social Movements to review their strategies and programmes on environment and education. The present study is a specific international cooperative embodiment of the specific actions proposed above.

Some of the working assumptions of the present study were developed in the treaty process and we summarize several of them here:

1. The root causes of such complex problems as increasing poverty, environmental deterioration, communal violence can be found in the dominant socio-economic system. This system is based in over production and over consumption for some and under-consumption and inadequate conditions to produce for the great majority.

2. The above crisis stems from the erosion of basic values and alienation and non-participation of peoples in the development of their futures.

3. We must, in a world context, start developing fundamental alternatives to existing conventional economic development models. Such alternatives include the abolition of those programmes of development, adjustment and economic reform which maintain the existing growth model with its devastating defects on the environment and its diverse species, including the human one.

4. The fourth assumption is the "quality of life" assumption. In line with the treaty , we consider that environmental education should urgently bring about change in the quality of life and a greater consciousness of personal conduct, as well as harmony among human beings and between them and other forms of life.

The Treaty also elaborated a number of principles for education for equitable societies which we have incorporated into the framing of this study:

1. Education is the right of all and we are all learners and educators.

2. Environmental education is not neutral, but it is political and value full rather than value free.

3. Environmental education must be holistic in approach and interdisciplinary in nature,

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[1] Treaty on Environmental Education for Sustainable Societies and Global Responsibility, Rio de Janeiro, June 09, 1992.

focusing on the relation between the human, nature and the universe.

4. Environmental education should treat critical global issues, their causes and interrelationships within their social and historical contexts.

5. Environmental education values all different forms of knowledge. Knowledge is diverse, cumulative and socially produced and should not be patented or monopolized.

## 3. OBJECTIVES

In our original submission to IDRC, our objectives were noted as follows:

1. Identify indicators of success for transformative learning within environmental action contexts;
2. Undertake an international survey of transformative education initiatives;
3. Develop a number of conceptual working papers dealing with the central concepts of transformative learning through environmental action as seen through a gendered approach to environment and linked to the specific focus on food production and biodiversity.
4. Organize a collaborative workshop for the analysis of how transformative learning works for the authors of the case studies and the project team members.
5. Document the setting-up and use of an electronic computer-based network for project administration, conceptual development and information sharing.

## 4. METHODOLOGY

This qualitative and comparative education study has been carried out in a collaborative and participatory framework. It has been a collaboration between three different research teams: Budd Hall, Darlene Clover and Edmund O'Sullivan of the Transformative Learning Centre based at the Ontario Institute for Studies in Education (OISE) in Toronto; Leesa Fawcett and a number of graduate assistants of the Faculty of Environmental Studies(FES) at York University also in Toronto and Moema Viezzer and her team which drew on expertise from both CEMINA in Rio De Janeiro and REDE MULHER in Sao Paulo, Brazil. Although in practice the differently situated knowledges of the three different research teams overlapped often, in theory the three teams represented a diversity of skills and experience in international adult and popular education and educational theory (OISE), environmental education, nature and society(Faculty of Environmental Studies) and women-centred environmental popular education and action (Cemina/Rede Mulher).

The basic design and conceptualization of the project was carried out by Hall, Clover, O'Sullivan, Fawcett and Viezzer. This team met on five separate occasions during the formulation and implementation of the project. Darlene Clover, as the Senior Research Officer on the project carried out most of the day-to-day coordination of the work. Moema Viezzer was responsible for the identification of case studies and case study writers and together with Darlene Clover for the design of the collective analysis workshop. Leesa Fawcett and her team at York

University were responsible for the international survey. Darlene Clover and Rory O'Brien of WEB were responsible for the use of electronic communications in the project. Budd Hall has been responsible for the writing of the final project overview.

Early in the design of the research, it was agreed that the range of experiences of transformative learning in the entire field of environmental action was too large and diverse to be able to provide enough points of comparison in this piece of comparative research. It was agreed therefore that the case studies would be drawn from experiences of environmental action in the context of food production, distribution and consumption. Food is life itself and from the point of view of food, or even, as we were to discover in the study of the 'Nine Seeds' project in India, from the point of view of the seed, all relations with nature can be understood. As Leesa Fawcett points out in her paper written for this project and included in this report, everything we put onto our food, we eventually eat.

## The Case Studies

Navdanya: A Grass Roots Movements to Conserve Biodiversity and Sustain Food Security
Vanaja Ramprasad (India)

El Daen: Environment Conservation
Naila Babiker Hijazi (Sudan)

Berlin and Brandenburg as Centres of Environmental Activism: Organic Food Consumption and Organic Gardening and Farming
Elisabeth Meyer-Renschhausen (Germany)

Community-Based Rural Development Project: Community Ownership, Empowerment and Cultural Recovery
Jose Zarate (Six Nations Community, Canada)

Women in Citizen's Action: The Struggle Against Hunger and Poverty and in Defense of Life
Moema Viezzer and Tereza Moreira (Brazil)

Transformative Learning in Marginal Areas of Indigenous Migrants in an Amazon City
Omar Ovalles (Venezuela)

People's Rights, Environmental Education and Ecological Action for Sustainability
Marta Benavides (El Salvador)

The research design represented a combination of approaches designed to provide as much illumination as possible to the research questions. It combined elements of documentary research through the preparation of four major working papers. It included a series of case studies prepared by writers directly engaged in the actions identified. The study also included an international survey of transformative learning as identified by groups themselves.

The data generated by the working papers, the case studies and the first stages of the international survey were analyzed in a collective analysis workshop which brought together the various case study writers, the research coordinating team and additional research assistants. The collective analysis workshop, itself a powerful example of transformative learning, placed the experiences of the environmental activists-researchers at the centre of the analysis and through a variety of participatory research and popular education techniques, reflected on the role of learning.

The report of the collective analysis workshop was compiled by Darlene Clover and circulated to the case study writers and other participants for additional comments, corrections and additional insights which they might have gained after leaving. In addition the proceedings of the workshop were video-taped in order to have a full record of the events and to produce a video report of the workshop for those interested.

## 5. SUMMARY OF FINDINGS

This summary cannot possibly do justice to the richness of the interactions, the depth of experience shared in the project or the full sense of transformative vision which passed among the project team at several moments during collective analysis workshop. We have provided as much of the background documentation and material as possible so that others will be able to work with the data as well. We have also produced a video report of the workshop itself which we hope conveys something of the spirit of the work and at least allows us to share some of the images of ourselves with the readers.

Our summary, guided by the analysis coming out of our collective analysis workshop, is structured as follows:

1. What has to be transformed?
2. What are the principles of transformative learning?
3. What are the practices of transformative learning?
4. What are indicators of 'success"?
5. What did we learn about using electronic communications?

### a. What has to be transformed?

The starting point for transformative learning is an understanding about what it is that needs to be transformed. Transformative learning and related concepts of adult, non-formal, popular or environmental education are located somewhere; they are centred in the daily lived experiences of women, men, girls, boys, animals, plants, relations of inclusion and exclusion and so forth. In the workshop this question brought forth many answers and great debates.

### Life conditions

From all participants came the response that the "life conditions" of the majority of the people around the world need to be transformed. From Brazil there was talk of the "food refugees", people coming to the city for no other reason than to find foods to feed the family. We heard of the difficult task of surviving in the increasingly desertified areas of Sudan with little food or water. Those from countries such as Canada and Germany deal with the overconsumption of foods which are bad for us...often grown on land in poor countries which has been taken from small farmers. The poor housing of forgotten aboriginal peoples in the urban Amazon is as much a condition of daily life as the more romantic visions of isolated peoples living close to nature. Also in the 'North' the privileged classes in particular generate mountains of waste which destroys communities and damages the ecosystem; cars are used instead of bicycles or mass transportation. And overwhelmingly in all communities in all countries in all classes women and girls carry increasingly responsibility for the maintenance of the 'quality' of life.

### Systems of destruction

A strength of ecological frameworks is their ability to demonstrate the interconnectedness of all life cycles. On a global scale, by coming together from many locations in our different societies and many different geographic settings, we actually 'felt' the systemic nature of various destructive forces through the stories we told. For example we heard from India and Brazil how the emphasis on mono-culture has resulted in a shift from local growing and consumption patterns to patterns of production for the world market. And as part of the systemic nature of mono-production small farmers have been forced to sell their land, there has been a loss of traditional seed diversity, men have left their families in search of work, and the generation of wealth has been shifted from local to global. The global systems of production and consumption were described by at least one participant as, "a killing machine" as the levels of violence within local communities are on the increase even as levels of violence at the 'super-power' level are on the decrease. The Fawcett paper provides important information on 'circles of poison' in foods because of our agricultural practices.

### Practices of power and privilege

All participants spoke of the need to transform practices of power and privilege. Government policies reinforce already existing relations of power providing one set of rules for the oppressed, another for the privileged. It is through such practices as those in education, agricultural extension, communications, land tenure, borrowing and lending, seed and fertilizer sales, food security or even governance that existing relations of power and privilege are maintained. On global levels these are maintained by the rich countries, among people by white males, within nature by human beings, within class structures by those with financial capital. The practices of power and privilege for example were directly linked to the ecological destruction of El Salvador, according to one of the participants. In the case of the Six Nations case study from Canada the practices of white dominant culture agricultural practices resulted in the loss of traditional knowledge about food cultivation. In India the practices of the multinational agribusinesses to remove conservation of genetic seed stock from local levels to company controlled laboratories undermines the capacity for subsistence, fosters many forms of intellectual piracy and puts entire farming systems at risk to possible infestation damage.

### Gender relations

The Navdanya project in Southern India focuses on the role of women as 'keepers of the seeds'. This is at once a practice of physically looking after and keeping the seeds from one season to the next as well as a metaphor for the special role of women in preserving bio-diversity in our world. In a second example from the Brazilian hunger campaign, it was shown that the majority of the households experiencing hunger and malnutrition were headed by women. Women are also the majority of the organizers on the front line in the Brazilian campaign and the vast majority of the other global environmental action campaigns which we looked at. The questions being asked in Brazil and elsewhere are, where are the men, why have they left, why on issues of survival are men increasingly missing? Existing gender relations with their resulting divisions of male and female labour and responsibilities for daily life in homes, businesses, universities, science and politics and other domains contributes dramatically to the risks to planetary survival we now face. What will the continued impact of a global market system designed and run by men be on the lives of those left behind...both women and men? Patriarchal dominance of fields such as genetic engineering, agra-technology and the production of arms to date offers little hope for the well being of the planet.

### Ways of thinking, speaking, learning

In the collective analysis many of the observations made by the participants referred to the necessity of transforming our intellectual paradigms relating to environment and learning. It was noted that the concept of 'development' and 'modernization' actually contributes to ecological destruction. Much of our language excludes those persons with whom we need to work. Binary thinking, where we try to understand the world in terms of North-South, male-female, right-wrong and so forth impedes our ability to find solutions to ecological problems which are better understood in systemic and holistic ways of thinking. The example from the Sudan of the development of a Code of Behaviour developed by isolated rural people to develop new relations of understanding and respect amongst all living things is both an educational practice, an act of learning and an example of a new way of thinking for many of us. It does not always mean discovery of new knowledge. In the case from the urban Amazon setting in Venezuela the transformation in ways of thinking and learning had to do with the recovery of what they called 'sleepy knowledge', or already existing knowledge.

### b. What are the principles of transformative learning?

Transformative learning, as Hall and Sullivan note in their paper, contains moments of survival, critique and creation. It is about working with the following principles in the intentional creation of educational practices and processes. The principles which we are including here have emerged from the case studies and the dialogue during the collective analysis workshop.

1. Recovery of a sense of place
2. Recognition of the importance of biodiversity
3. Reconnection with nature
4. Awakening 'sleepy knowledge'
5. Acting and resisting
6. Building alliances and relationships
7. Learning skills
8. Recognition of historical struggles and resistance

9. Valuing process in learning
10. Understanding relations of power

### Recovery of a sense of place

Simply put, it is the contention of this research, that our propensity to destroy the ecological balance in our communities varies according to the degree of 'sense of place' which we have. Our work reinforces the significant literature on bio-regionalism and means that in thinking about the planning of intentional learning, we need to build practical and theoretical ways to recover our sense of place. Place refers to our locations in bio-regional terms and also in terms of such social indicators as race, class, gender, sexual-orientation, and able-bodiedness.

### The importance of bio-diversity

Bio-diversity is that complex celebration of difference which allows for the flowering and survival of the world. Respect for bio-diversity means honouring space for bio-diversity to flourish. Bio-diversity performs its magic best when performing in settings which most humans understand as wild. The reduction of bio-diversity in the form of fewer seed varieties, extinction of animal species or the disappearance of other life forms threatens our survival. The full implications of concepts such as bio-diversity have broad meanings even for our understanding of the roles of our particular human species. Respect for Education of a transformative variety increases the visibility and understanding of the importance of bio-diversity in ways that make sense in the particular context involved.

### Reconnecting with nature

Our pedagogical practices, according to our understanding of transformative learning, need to seek specific ways for us to reconnect with nature. The first aspect of this is the recognition that we are part of nature and not apart from nature itself. We are connected with every form of life as we share the same molecular building blocks. Our collective ability to survive as a collectivity of all living beings depends on each of our species surviving. The emphasis is on ecologically interconnected webs of life. This means that opportunities of a theoretical, practical, experiential and participatory nature whereby students, adult learners, members of the public can begin to recover the sense of the natural need be sought.

### Awakening 'sleepy knowledge'

The knowledges of ancient peoples, the knowledges of women, the knowledges of those who live closest to subsistence have so very much to offer us in doing environmental education. Because knowledges and system of thinking have been so dominated by euro-centric, rich country, patriarchal paradigms, older and non-dominant forms of knowledge have been allowed to 'go to sleep'. The notion of sleepy knowledge, coming in our study directly from urbanized indigenous women and men in Puerto Ayacucho in Venezuela, refers to the fact that specific knowledge about how to live in closer harmony with nature making use of natural products still exists but needs to be reawakened. So the processes of recovery and reawakening as part of our pedagogical work in transformative learning are key.

### Acting and resisting

Transformative forms of learning as we have come to understand them through this study are very much seen as action-oriented, learning by doing. To some extent we shared an earlier sentiment as Marx who once noted that the point of philosophy is not simply to understand the world, but to change it. Transformative learning believes that acting on the world, making and remaking the world is one of the most profound ways to understand it. It might well be argued for example that even Western science, with its built-in biases, offers us sufficient proof of the declining health of our biosphere. But that knowledge cannot help us if it is not linked to social and political action which will make changes in the laws or practices which destroy us. Resistance, itself a form of action, is that quality which allows us as individuals and as collectivities to maintain our sense of integrity and community thereby denying others of power over us in important ways. Transformative learning seeks out action and supports resistance.

### Building alliances and relationships

In each of the examples of transformative learning which we have looked at in our research, there has been a strong emphasis on the importance of people working together. This is because change of a systemic nature is a long-term matter which requires skills and energies beyond any single person. Each of our cases of transformative learning involved the creation of alliances across groups which were different. In Sudan the rural environmental association created an alliance with adult educators at the University of Khartoum. In Brazil popular organizations of street kids, workers, women and others came together in a poverty and hunger Campaign. In El Salvador former members of the armed opposition established new alliances with peasant leaders. Transformative learning needs to find ways to strengthen our skills in working with others. It has to do with organizing, understanding difference, respecting diversity, learning how to build consensus, reaching out to those who do not share our views and with sustaining long term political and operational strategies. This may be shanty town women coming together to start a food bank. It may involve campesinos in El Salvador eating together or joining the Rural Leadership Network. It could be Canadians linking up around community shared agriculture. For us as environmental educators the question is how can we put into practice ways of learning which strengthen the building of relationships?

### Learning skills

Transformative learning is not just about understanding concepts and connections, it is also about learning and teaching specific skills. Words like empowerment sometimes obscure the fact that there are specific skills involved in environmental action and that learning how to do something may be as empowering as a new insight that gives broader meaning to ones daily life. In the Six Nations of the Grand River in Canada for example, learning how to farm in the traditional way of the ancestors involves skills as well as consciousness. The creation of organic bio-shops in Germany requires skills in running a small business. The challenge to those of us who work or seek to work with transformative forms of learning in these contexts is to look for the specific skills needed for the actions intended and finding ways to learn or provide them.

### Recognition of historical struggles and resistance

Part of the way in which the powerful control others is to deny them their history. Our text books and histories are filled with the stories of the rich and powerful. The struggles for the rights of workers, women, people of colour, persons of different abilities and others are difficult to find. Similarly the struggles of the thousands of women and men who have resisted ecological destruction often with their lives need to be part of a transformative learning process. The connection with historic struggles not only is a source of energy to keep going, but is a source of knowledge for the transformative work needed now.

### Valuing process in learning

How many environmental education activities have you noticed that have focused on trying to get the most 'facts' crammed into our heads in the shortest period of time? Transformative learning means that the process of the learning itself is as important as the content. Beginning with the daily lived experiences of those involved, transformative learning calls for increased attention to the relationship of the learning processes to the overall goal of our work. The facilitation of transformative learning fortunately can and does draw on the rich practices of adult, popular and community education. Practices which are appropriate to the culture and respect different ways of learning are similarly emphasized.

### Understanding relations of power

From our research we found learning for transformative purposes to be also involve understanding relations of power within a specific context. Understanding relations of power helps in understanding the nature of any given natural exploitation or abuse. For example in the case of the Navdanya project in India, understanding the relations of power within the Indian state, the Agra-business global corporations and the sale of hybrid seeds and fertilizers is an important part of the village level seed project. Such a seed conservation project would not be as effective if only the conservation practices were learned in the absence of understanding the relations of power. Understanding the relations of power also allows for the potential to alter those relations and very importantly provides a framework for analysing future actions by agra-business interests. Power flows through each and every practice in everyday life via gender relations, race and ethnic relations, class relations and more. Sensitivity to the complex relationships in power and knowledge in ecological contexts is a goal for transformative learning.

## c. Practices and Processes of Transformative Learning

When all the participants were together for the collective analysis workshop, we were able to identify nearly 100 specific practices and processes of transformative learning. In the course of our discussions it was evident that many of the practices which formed the heart of the environmental actions under discussion had not been intentionally designed as educational practices, but in fact became key moments for very powerful learning which deepened the understanding of the actions at hand and reinforced the sustainability of the overall work. More details on these practices can be found in the case studies and in the notes from the workshop itself. Many of the principles identified in the section above are incorporated in these practices. We have chosen only two or three examples from each category to illustrate a variety of practices.

### Celebrations and rituals

Celebrations and rituals represent an important form of environmental education having the capacity to combine new and old knowledges, spiritual and physical activity and ways of coming closer to the earth. Meditation has been used as well in some of the case study locations. In making use of celebrations and rituals for environmental education, we are drawing on some of the most powerful and ancient methods known to us. These are but two of what are literally thousands of such activities. As part of this project, we drew on small celebrations throughout our collective analysis workshop and closed the entire week with a ceremony of collective weaving of a web of sisal twine pausing each time to think about what our experience had meant to us.

### Festival of the Seed, India

The Navdanya project in India sees transformative learning as an awakening of spiritual facilities that slumber within the farmer. Learning is the drawing out of wisdom lying dormant within the vast range of agricultural experience that the farmer has. One of the practices used by Navdanya is the incorporation of traditional festivals for the seasons into the work of identifying and preserving the best genetic stock for the coming seasons. In this ceremony women play the central role as 'keepers of the seeds' as they participate in an elaborate festival of song and dance which focuses the entire community on the process of seed preservation. The seeds which have been selected for keeping have identified by the local farmers who have elaborated their own criteria for selection of seeds based on qualities which they base on their very specific contexts including the desire to grow without imported fertilizers.

### Sharing of Traditional Histories, El Salvador

The Rural Leaders Network in El Salvador believes that their cultural, spiritual and agricultural work feeds the empty stomachs, supports the community and feeds the soul. The spiritual aspect of life, they note, must not be underestimated. They make extensive use of song and music in their training programmes. They pay particular attention to the sharing of traditional histories when they begin their training. They ask the leaders from the different communities to tell the stories of their communities. These are communities with many thousands of years of history and the telling and exchanging of each story calls forth the years of resistance of the people of the region and shows common elements among them.

### 'On-the-spot' Learning

In India they spoke of in situ learning as opposed to ex situ learning which was compared to the practices of in situ preservation of seeds compared to ex situ preservation of seeds. It was pointed out that maintaining control of the genetic stock would be done more responsibly in the communities than by private companies in seed laboratories somewhere else. If we think about educational work, the same thing might be said; education works best when it is kept close to the communities and suffers when it is designed at a distance by others. In all of the case studies we examined, a majority of the learning was done in the farms, homes, shops, workplaces or elsewhere that work and daily life was going on. The links between action, relevance and natural processes are so much more obvious when one is standing in the field.

### The Community Garden, Six Nations, Canada

When Lehman Gibson works with the trainees at Six Nations of the Grand River near Brantford in Southern Ontario in Canada, he does so on the gently rolling land behind his home which is one of two community gardens and test sites for the growing of traditional varieties of indigenous foods. His stories grow out of the land much as does the corn, the squash and the beans...the traditional three sisters of the Iroquois confederation. Whether thanking the creator directly in a prayer before working or simply through the respect he shows for the earth which brings so much each year, the trainees get spiritual, technical and philosophical learning while they work on the spot.

### Reclaiming Urban Space for Gardens, Sao Paulo, Brazil

In the shanty towns of urban Brazil the homes are small and close together. And while we are used to thinking of gardens and farms as rural experiences, the women's groups in the Hunger Campaign have begun to reappropriate urban space to create gardens for the cultivation of 'seeds of diversity'. In spaces that have usually been used for garbage, women have reclaimed the land for gardens where some women grow one crop and others another and then they share together what they grow. And while it is very difficult to provide security for the crops in a community where hunger is so prevalent, the urban gardens provide more than just a source of food. They are at the same time a place for women to come together to figure out a variety of other ways to survive. The gardens also offer ideas about other more productive uses for the urban land that all too often becomes just another dump.

### Learning from Elders

To some extent all of the case studies examined had an element of learning from elders. In the case of Germany, the urban women and men of Berlin in their desire to transform themselves from consumers to sustainers went to some of the older organic communes in the surrounding countryside to learn from the old timers who had been working there for a long time. In the Six Nations agricultural project two Elders, one man and one women are recognized as key advisers for the project as well as teachers on practical farming and gardening experience. The members of the Six Nations community would simply not create work at a community level without the involvement of some of the Elders. Similarly in the El Daen area of Sudan, the Elders (all male in this case) were at the heart of the conservation decisions and leadership. Who are our elders in the various educational contexts that we work in?

### Community meetings

Another practice which was found in all of the projects were the use of community meetings of both an informational and participatory nature. Transformative learning in the examples studied made full use of the very wide variety of popular education and adult education methods in these community settings. Cinema study groups, story telling, using cartoons, using posters, community theatre, role playing, song, music and art were all used by the various campaigns. The Brazilian campaign, the work in El Salvador, the work in Venezuela and India all had a rich and imaginative use of participatory approaches for use in community meetings.

### Nature tours/study visits

Nature can teach us much if we can learn to hear its messages and read its signs. Sometimes other species and plant life are all around us. In these cases educators need to learn to be quiet and become more open to the world around us. Sometimes in urban settings we feel distant from and apart from the other parts of our natural world. In these cases it is useful to go to places where nature is more healthy and sustainable from an ecological point of view.

In Sao Paulo, one of the study visits involved taking the women from the shanty town to the area water treatment plant. Here it was possible for the women to see all the chemicals put into the city water and to talk with the workers there about how water becomes contaminated in the first place. This results of this visit were clearly seen when the women's group reclaimed a spring that existed in their neighbourhood by removing all the rubbish and putting up a barrier around it so that it would be kept clean.

In Berlin, urban environmental activists in search of a way to strengthen their relationship with nature began to make visits by bicycle to organic farms in both the former West and former Eastern parts of Germany surrounding Berlin. Similarly in the Indian case study where one of the objectives is to educate the consumers of various food products, study visits of towns folk to villages has been organized.

### Gender analysis

Women and their lives are at the heart of transformative learning. Understanding the differential impact of environmental destruction on the lives of women is critical to being able to find a solution in most cases. In all of the case studies, women, because of their central role in food growing, food preparation, and care-giving in general are fundamental to any possible transformation. This means that educational practices which directly or indirectly allow for increased visibility of the roles of women, particularly among the men are important. Practices such as consciousness-raising, feminist popular education, cooking classes and other activities which simply allow women to be together outside of the very heavy load of daily work were found in most of the case studies.

### Medicinal plant collections

In the work in El Salvador, Six Nations of the Grand River, Venezuela, Germany and the Sudan the uses of plants for various medicinal purposes has arisen as a practice. In El Salvador in particular, the growing of medicinal plants is a central part of the rural leadership work. Recovery of knowledge about medicinal plants strengthens the self-sufficiency of communities and reduces the dependence of expensive imported medicines for many common ailments. There has been a revival of such interest in each of the countries looked at and the active tending of such herb gardens has proven to be an excellent adult education tool.

### Kitchen compost piles

In Brazil and Germany the keeping of a kitchen compost pile was an intentional part of the work of environmental activists. The use of a compost pile with its direct and visible lesson about reducing organic waste and the power of nature to nourish itself by turning waste into good soil is one of the best ways of letter nature teach us. Along with reducing our creation of rubbish, the recycling of organic products can make a substantial difference in our communities.

### Marches and protests

Environmental action involves so many ways to act. Sometimes it is important to take collective action in order to bring certain information to the authorities involved. These marches, protests and other forms of non-violent action are always very powerful ways to learn about the distribution of power, the role of different kinds of knowledge and the strength of acting together. Whether in India protesting the patenting of the Neem tree or in Brazil going to local authorities to provide clean water, the right to take collective action is one of the most power learning tools and means of responding to unfair environmental practices available.

### Creating community markets

In both the Berlin and Six Nations case studies, the creation of a community market has been suggested as an educational as well as an economic structure. In Berlin, green activists want to buy local organic produce. They have been prevented historically from doing this because the large food producers and food marketing organizations have had a monopoly of food distribution. The creation of local 'bio-shops' where local producers can find buyers has proven to be both a functional marketing arrangement as well as an excellent place for informal education to take place. The buyers, sellers and shop-keepers educate themselves about so many issues having to do with ways to live more lightly on the earth.

At Six Nations, the market research done for the start-up of the project, indicated that the community spent nearly $11 million dollars a year for food. None of that money was spent in the community. So as part of the recovery of traditional food crops and better use of the land in the community there are plans for a combination community market and educational centre. This market/educational centre would serve both the community itself with films and talks about aspects of indigenous agricultural and culture and would be a destination for outside visitors wanting to buy locally and learn something about the area.

### d. Indicators of Success: How can we know that transformative learning is happening?

This section, like the others draws from all the case studies, the analytic papers and from the collective analysis done at the workshop in May of 1994. The concept of "indicators of success" was criticized by some of the participants as being too much the language of top-down externally driven training or education. But as discussion continued, we began to formulate a series of practices by which we might look at any given situation. It must be stressed that the specific contexts are the key to any question about success with the fundamental question being success for whom? The question of 'success' needs to begin with the women, children and men whose lives are at the heart of the specific processes in question. In what follows we are talking about what might constitute positive results for activities of environmental education in contexts which are responsive to and respectful of local differences and diversity.

### Development of new practices

To what extent have new practices surfaced or developed? This obviously differs in each context. In Berlin, the citizen groups involved with the greening of the city wanted to see more bicycles being ridden on new bicycle lanes. In Sao Paulo, Brazil women wanted to reclaim land for urban gardens so the number of new gardens is an important fact. In the Indian case, farmers refusing to buy fertilizer and hybrid seeds is a new practice indicating a new awareness.

In Puerto Ayacucho, Venezuela, increased uses of Palm trees constitutes a new practice. Each environmental action will have potential to support new practices of very different types.

### Participation and mobilization

Mere participation is not in and of itself much of an indicator, but increased participation in specific new practices or in activities based on local mobilization to try and organize for a change can be most important to know. In a large scale campaign such as the poverty and hunger Campaign in Brazil, increased participation is a critical ingredient in the overall effectiveness of the project. In village seed conservation projects, the number of families participating in the seed conservation programme is valuable and is in fact an objective of the project. One could of course turn this indicator around and say that decreased participation in agra-business programmes or farming practices dependent on artificial fertilizers would be the measure of success. Participation needs also to look at the question of who is participating? What is the role of indigenous peoples or women in a particular process. However it is taken, participation and mobilization are valuable areas of focus.

### Changes in gender differences and roles

To what degree are women treated better? Do more men begin to stay in the community and help or do they continue to leave? Do boys and girls begin to share roles in more equal ways? Is there more awareness of the differential impact of toxics, pesticide poisoning, and unsafe food supplies on women and girls? Are women given support for the additional work they take on in providing energy for environmental action projects?

### Connections are made between local and global contexts

To what extent are people making the connection between the seed which they hold in their hands and the global struggle over ownership of genetic stock? Can people understand the link between hunger in their homes in Sao Paulo and the expansion of business interests into sugar cane production for alcohol for cars in the cities? Why are the varieties of food crop species declining? Why are traditional uses of the Palm tree being lost due to artificial substitutes? What does 25 years of war mean for the eco-system of El Salvador.

### What new knowledge is produced or recovered?

Our participants said one indicator of success would be when academics begin to learn from local people. We might want to add and when local people get credit for the knowledge! Are new uses of plants revealed or rediscovered? Are new understandings of relations of power which keep change in environmental matters from changing noted? Are new ways of relating to other animals and plants learned? Are new ways of gardening, composting, preserving foods learned? Have new ways of understanding the role of non-violent action been identified? Have citizens produced new knowledge about the impact of consumerism on their own lives?

### Legislation and regulations

Is local legislation introduced to control environmental degradation and is the legislation enforced through a court or similar bodies? Are international rules and normative statements put together on issues of loss of bio-diversity? Are new codes of behaviour developed spelling out new relationships between people and other living things? Are laws regarding levels of pesticides in our food monitored and enforced? Are people's right to land enforced by law? Is the right to learn respected? Has the environmental action moved from practice to law?

Increased self-sufficiency and bio-regionalism

To what degree are local practices being found for local issues? To what degree are local farmers independent of global suppliers for agricultural inputs? To what degree do local farmers supply local populations with foods? To what degree does international information available support community-based decision making? To what degree are land use issues based on the specificities of the bio-region in question. To what degree are people de-linked from the global market?

Increased cooperation

Are there new structures for cooperation re marketing, seed sharing, using traditional products, solving as yet unidentified issues? Have people's isolation in the face of unjust environmental practices been reduced? Are individuals able to get support for struggles against landowners, unfair government regulations or other forms of oppression?

New Alliances and Networks

Effective environmental action and the related transformative learning according to this research encourage participation in broader alliances and networks. To what degree are local communities able to gain solidarity or share local knowledge with others in a broader alliance? To what degree are local activists able to make use of information available on national or international networks to strengthen their own actions?

### e. The Uses of Computer Networking in the Project

I encourage readers to take a look at the full notes on the extremely rich and heated discussion which took place about the value of computer-based networking for our work in the project. The full use of computer-based communications was planned from the beginning as an important part of this project both as a means of linking the project coordinators in two parts of Toronto with Brazil and so that case study writers might be able to communicate with all of us from their respective countries. In the final analysis computer-based communications played a very minor role in the project. In summarizing our experiences with computer-based communications we would say:

1. The best use of computer networking was made by the OISE Transformative Learning Centre which used it primarily for searching through the hundreds of global computer networks for information which might compliment the work which we were doing.

2. The Toronto-based team, all of whom had access to computers and networking software and training did not in fact use the computer networking system, even the internal TLC project bulletin board at all. We simply called or saw each other.

3. In spite of the purchase of a computer and training for the Brazil connection, we never once

used the computer instead of the fax. In the Brazil office there was only one computer and one person who know how to use it, so access was not easy. In addition there were irregularities on the local phone lines so that messages were sometimes held up.

4. None of the case study writers had access to computers in the communities where they worked. Further in the collective analysis session they were quite angry to learn that Ontario is spending about $100 million on the provincial information highway while most of the people they work with are hungry. Where does the North get this kind of money? Can computer-based communications really serve issues of justice and distribution of information to grass roots organizations in the South or will this be one more way in which the gap between the haves and the have-nots is widened?

## 6. DISSEMINATION AND DIALOGUE

There has been substantial interest in this project prior to the the pulling together of this draft final report. We have been able to respond to a number of invitations to either publish information on the project or make presentations. Unesco's Connect international newsletter on environmental education has published information about the project. In Canada Alternatives, the environmental quarterly from Waterloo University has publicized the study and shown interest in publishing more on the results. Edmund O'Sullivan presented a paper based on his work at the Comparative and International Education Society meeting in San Diego in March of 1994. Darlene Clover has presented papers based on the research at the Canadian Association for the Study of Adult Education conference in Vancouver, British Colombia in June, 1994 and again at the Association for Research on Non-Profit and Voluntary Associations in San Francisco, California in October, 1994.

The North American Alliance for Popular and Adult Education, a group linking community-based educators from Mexico, the United States, Quebec, English-Speaking Canada and Aboriginal nations, invited both Budd Hall and Darlene Clover to share the results of the study at their founding General Assembly in August of 1994. One of the results of this was the invitation by NAAPAE for Darlene Clover and Budd Hall to become the first coordinators of the Environmental Popular Education network. We have begun to take the findings of this project and move them into the North American context in quite substantial ways.

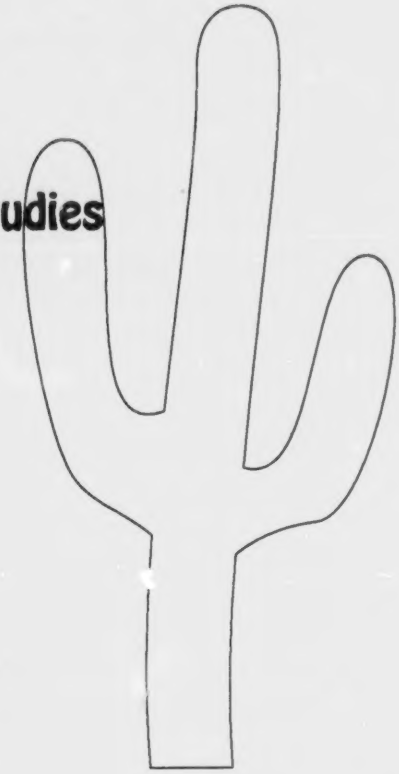
On the local scene, the Ontario Healthy Communities Coalition, which has community representation in some 60 Ontario communities invited Darlene Clover and Budd Hall to facilitate a workshop at the Annual General Assembly of the Coalition November 25/26, 1994 in Port Elgin, Ontario. The OHCC brings together Health, Environmental, Community Economic Development and other interests in a broad-based coalition concerned with the notion of 'healthy and sustainable communities'. Leesa Fawcett has incorporated aspects of this study into work she has undertaken in the development of an environmental education syllabus for the Commonwealth of Learning. She has also encorporated material into teaching at the FES.

Finally, a most important breakthrough has been achieved with the invitation by the ICAE to the project to present the results to the International Workshop on Environmental Adult Education which is taking place at the University of the Philippines at Los Banos December 5 -

15, 1994. This international workshop brought together 30 environmental adult educators from 12 countries who will continue to work together for a further two years.

## 7. CONCLUDING REMARKS

Coming together in support of healing processes with the earth is a source of the most profound spiritual and emotional nourishment. Knowing that we are woven into a common web by global and historical practices can be both restraining and energizing. Having the opportunity to talk with others about the relationship of food, environmental action and learning has been deeply moving for those of us involved in the project. Our ability to transform and survive depends on our collective ability to learn both the nature of our contemporary context and a way of working to change. We can make the liklihood of our survival with justice more likely by paying more attention to the ways in which learning is structured. We can make survival more likely for other living beings if we learn to live ourselves in profoundly transformed ways.



# Case Studies

## Case Studies

This collection of case studies is an mirco analysis of some of the work going on around the world to combat hunger and chemical use, maintain biodiversity, and revive traditional agricultural practices which are in harmony with the earth's cycles and needs. Each of the seven studies reflect the diversity of popular or non-formal educational practices, materials, techniques and transformative learning which takes place when people are involved in environmental action initiatives. Although there are similarities among these stories and they all focus on the issue of food production, distribution and/or consumption, the projects were chosen because they represent a different continent, region or country of the world, and also because of the diversity they reflect.

The Sudanese project is an extraordinary case where leaders from different nomadic tribes, concerned with losing their traditional lifestyles due to environmental degradation in the form of rapid desertification, approached the government and university for assitance. They themselves have taken the lead in reviving the traditional staple of "sesame cakes" which can be stored indefinitely without deterioration or expensive preservation. Education focuses on preserving wildlife in the region through the elimination hunting certain species and enforcing hunting laws as well as those against cutting or burning trees. Transforamtion has come in the form of a code of behaviour which is being adopted by many communities in order to preserve both their environments and ways of life.

In Germany, popular or non-formal environmental education efforts have brought about a transformation in behaviour for many Berliners. "Bioshops" or organic health food stores have become popular around the city. Vegetarianism and eating locally grown foods from organic cooperatives is becoming more and more common. Citizen's groups, most often spearheaded by women, have lobbied governments and raised public awareness to lower speed limits within the city limits and install bike lanes and block other streets to traffic.

Brazil has expereinced great success in raising public and governmental awareness vis-a-vis the issues of hunger and the feminization of poverty through their educational practices. Spearheaded by a local women's network entitled Rede Mulher, a national campaign has been developed to plant organic gardens, provide food for needy communities, and educate men and women on the causes of local and global food shortages. In all seminars, workshops and gatherings connections are made between the subordination of women and that of nature and other gender issues which affect the lives of so many.

The Venezuelan case study describes an ambitious project to recuperate the Amazon palms as a source of food, housing materials and traditional inexpensive medicine. An influx of indigenous peoples into the cities has led to massive poverty and the eradication of traditional ways of life. The project in the Urban Amazon uses education to restore traditional knowledge about the use of palms and raise the quality of life of those involved.

In El Salvador the case relfects the difficulties facing a country which has just emerged from 12 years of civil war and is the most enviromentally degraded country in Central America. A small number of educators, social scientists, women's groups, community workers and indigenous peoples act as facilitators and resources to communities to begin to rebuild ecosystems which have been destroyed. Educational materials are created by community members themselves, derived from local experiences and resources.

In Canada, the Community-Based Development Project brings together immigrants from Hamilton with members of the Six Nations Community near Brantford, Ontario. Its unique approach is to look to indigenous culture and knowledge in agriculture, and the development and distribution of Native food products as a means of identfying valuable cultural, education and training opportunities and providing the vision that agriculture can still be considered a viable way of life.

India's Navdanya (Nine Seeds) educational project looks to revive well developed knowledge and ways to derive livelihoods from the bounties of nature's diversity which existed to combat hunger. This project focuses on challenging through new practices the continued elimination of nature biodiversity which is the legacy of the Green Revolution. Women, the traditional keepers of the seeds, are teaching farmers around India the art of caring for and preserving seeds. Through non-formal and creative educational means, insitu conservation techniques are being re-introduced and understood as the most viable and sustainable practice.

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### workshop May/June 1994 at OISE, Toronto:

## "Transformative Learning Through Environmental Action":

## Berlin and Brandenburg as Centers of Environmental Activism, Organic Food Consumption and Organic Gardening and Farming

Berlin, the center of the German student movement in the late 1960s, also became the center of environmental activism in Germany. Twenty years ago, in 1974, some young women and men founded a grassroots group to stop the construction of a highway through a densely-populated area. Although this planned autobahn was never built, the group, the Bürgerinitiative Westtangente, is still struggling against new plans for highway development which pop up yearly in Berlin. This citizen's action group, or "Bürgerinitiative", gave birth to an amazing number of similar grassroots groups in the city working for better conditions for pedestrians and the users of public transportation. They called on the government to provide better protection for playing children, and there are now many pedestrian and reduced-speed limit streets where cars, if allowed at all, are not allowed to drive faster than a bicyclist (30 kilometers per hour).

One of the offshoots of this oldest grassroots group in Berlin is a bicycle shop where you can not only buy maps and new and used bicycles but also discuss bike-riders' initiatives and repair your own bicycle. When I first arrived in Berlin with my bicycle in 1977, I was about the only one who rode it to university. If something broke it was hard to get it fixed because there were no bicycle repair shops. So I was very happy to hear of the "Fahrradbüro" or bicycle bureau. Now the Fahrradbüro has expanded and there are new bicycle shops all over Berlin where you can buy new and old, expensive and cheap bicycles and everything you need to do your weekly shopping by bike.

More and more citizen's initiatives sprang up in Berlin, which have yet to be studied systematically. Although these groups have met with little success of late, their numbers have been growing again particularly in the 1990s. There are 150 citizen's initiatives working in Berlin alone, and although only one-fourth regard their own work as "successful", they are by no means ready to give up. Working with a group of like-minded people compensates for a certain amount of failure, as does the knowledge that such groups have at least managed to change public opinion significantly. My own citizen's group "Nelly Sachs Park" began with the aim of preventing a small park from being paved over in an area of the city, northern Schöneberg, which is already lacking in green spaces. At the same time we sought a drastic reduction of traffic on a street that is a virtual freeway running through the middle of the city, in order to protect the people who live there from traffic noise and the noxious smell and health dangers of auto exhaust. We became known throughout the city when, in September 1990, following a similar initiative in Hamburg, we organized a successful occupation of the Bülowstraße, which received extensive coverage in the national news weekly Stern.[1] More recently, we have turned our attention to the blind devastation of a lushly overgrown area of unused railway tracks. Although we were unsuccessful, we managed for a time to get almost the entire press, including the idiotic tabloid daily Bild, on our side. Our actions spawned a new city-wide group, virtually run by Greenpeace , which calls upon citizens to take their local government to court when the air and noise pollution in their streets exceed acceptable levels. Several hundred citizens have petitioned for a reduction of exhaust emissions and traffic in their streets, and twenty-six persons have already filed suits with the administrative court.[2]

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[1] Der Stern, 24.10.1991 or 1990.

Berlin also became the center of the women's movement and many environmentalist institutions. When I arrived in Berlin in 1977 there were only two organic food shops. One was in the Pallasstraße in Schöneberg, and both still exist, if in a changed form. Otherwise organic food was only available at a few of the weekly markets. Today Berlin is one of the largest markets for organic food. My neighborhood, northern Schöneberg, now has at least twelve organic food shops and a number of others selling natural products such as shoes, herbs and cosmetics. Schöneberg, with some 200,000 inhabitants, has about twenty shops where you can buy organically-grown produce. As far as I know no town in West Germany has so many "bio-shops" as they are often called. The situation is similar in the neighboring district, Kreuzberg: a huge number of natural foods shops and other small alternative businesses such as bicycle shops and craft workshops for about 200,000 inhabitants.

What is a bio-shop? The first thing people like my women's commune (Frauenwohngemeinschaft) eighteen years ago started buying there was bread. They decided to give up factory-baked white bread, devoid as it was of vitamins, fiber or flavor, and a major cause of digestive problems. Then they decided to buy free-range eggs there, which tasted better than those laid by the poultry industry hens fed on fish meal and worse who spent their short, nasty lives crowded into dark cages.

After some time we became more knowledgeable about organic produce and came to change our eating habits more and more. We decided not to eat animals raised in crowded conditions and fed on unwholesome industrial foods such as pulverized animal by-products, which, as has become apparent recently in Britain, often lead to serious illnesses. We switched to a more or less vegetarian diet of bread, dairy products, eggs, vegetables and occasionally fish. At first we found the vegetables in the natural food shops too small, ugly and expensive and bought our supplies at the supermarket. After reports from friends and the alternative daily paper (die tageszeitung, taz) about the dangerous additives often found in industrially-grown vegetables, like those which come from the hydroponic greenhouses in the Netherlands where they are grown without soil. We discovered that eating too many of these nitrate salads and soilless tomatoes could lead to all sorts of ailments from headaches or allergies to cancer. We also discovered the difference in the taste between organic vegetables, however ugly and small, and conventionally-grown produce. More and more people came to buy all of their food and other daily needs at the natural food store. I need not point out that women, including many on quite low incomes, were at the forefront both as founders of and shoppers in natural food shops. I myself completely changed my buying habits while working in a large alternative school. Although I earned much less money than before, I became radicalized in my daily habits, and began to purchase all my provisions in natural food stores.

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[2] See the information leaflet "Wehren Sie sich!" from the Greenpeace Group Berlin, Hannoversche Straße 1, 10115 Berlin- Mitte. Attn: Devadas Lapp-Zens.

West Berlin was not the only place where things were changing so rapidly, though. In East Berlin there were similar developments, even though it was much harder to create an alternative or green scene under so-called "actually existing socialism."

Fifteen years ago, in 1979, people from the Peace Library and the initiative against nuclear weapons came together under the protection of the Protestant church in East Berlin. At a meeting at the church research center in Wittenberg an organic gardening group was founded where people discussed the possibilities of growing produce without artificial fertilizers, pesticides and herbicides. Some people moved to the country and began organic farming, among them an herb farmer in Buch on the outskirts of Berlin, an apple farmer near Strausberg and a number of others north of Plauen and other areas not far from Berlin.[3] After the fall of the Wall this group became the center of a rapidly growing number of organic farming projects.

In May of 1989, still under the GDR, these organic farmers founded an association for ecological agriculture, the GÄA. It was no coincidence that they chose a name similar to that of the Greek earth goddess Gaia. Since the change of regime and unification, the GÄA has functioned as the organic agriculture and marketing federation for the new federal states, that is, the former GDR states. The aim of member farms is "largely self-contained farms or market gardens in the areas of landscape preservation, cultivation and animal husbandry."[4]

In the western part of the Federal Republic such marketing associations for organic produce have existed for quite some time. In 1971, South German farmers founded the Bioland organization to distribute, advertise and control organic products.[5] The Demeter federation is even older.

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[3] Wolfram Herrmann, Hörsterweg 61, D-13125 Berlin-Buch, Tel/Fax 0030/ 459 4222 and [illegible]hrhardt Kriening, Oberdorfer Weg 25, D-15320 Jahnsfelde, 03347/ 234.

[4] Das Giftgrüne Woche Informationsheft. Ausstellung und Veranstaltungsreihe zum Thema "Ökolandbau um Berlin", Ökodorf e.V. , 10785 Berlin-Schöneberg, Kurfürstenstraße 14, January 1994. Ed. Sabine Henning-Helbig, pp. 36f. The GÄA can be contacted under the following address: Geschäftsstelle, Gut Großbeeren, D-14979 Großbeeren, Attn: Regina Witt, Tel./ Fax: 03379/ 59306 or Reinhart Schade, In den Gehren 8, D-14558 Bergholz-Rehbrücke, Tel.: 033200/ 85902.

[5] Contact adresses: Bioland-Verband für organisch-biologische Landbau e.V., Barbarossastr. 14, 73066 Uhingen.

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The city of Berlin, with its 3.5 million inhabitants, is surrounded by the federal state of Brandenburg, at 2.8 million inhabitants one of the most sparsely settled federal states. Two-thirds of the population live in villages, the rest in small and middle-sized towns. These middle-sized towns often still maintain the character of pre-industrial farming towns, complete with clusters of barns at the entrance to many localities. Organic farms have sprung up in over 100 villages in Brandenburg, despite its poor and sandy soil, since the political changes of Autumn 1989. Most of them were founded by young couples, but some also by communes, groups of people from the West or East German "alternative movement". In a few cases entire former collective farms were turned into organic "ecovillages".[6] The poverty of the GDR meant that many collective farms already had to manage without many artificial fertilizers or herbicides. After the demise of the GDR many farmers were still poor, so their willingness to turn to organic agriculture was relatively high. Crisis can offer opportunites for change!

We know that, in recent decades, organic farming in the United States has been much less affected by economic crisis than conventional agriculture. In Europe, poor agrarian regions, such as the Allgäu in Southern Bavaria, which had often been considered "backward" because agrobusiness failed to take root, have played a leading role in environmentally-sound farming, not least because the farmers there never had much money for pesticides. The Federal German Office of the Environment has recently sharply criticized the European Community agricultural norms, calling for a complete reorientation of European agricultural policy: an agricultural policy that up until now has only supported industrial mass-production, subsidizing large farmers and marginalizing small farmers, despite the obvious effects of this policy, such as a North Sea polluted with nitrates. Only organic farming does not produce the surpluses which lead to ever-sinking farm prices, and the accompanying negative consequences worldwide. Only environmentally-sound cultivation methods can preserve the richness of regional animal and plant life, and also secure jobs and thus counteract further rises in unemployment. In the former GDR, about one-quarter of the population is currently unemployed, most of them women, even if government statistics quote lower figures. Organic agriculture supports small and middle-sized farms and local processing businesses, thus creating more jobs in the rural areas. At the same time, through new forms of marketing, organic production also reduces the environmental pollution caused by the needless transport of agricultural goods across Europe.

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[6] Brodowin in the Uckermark, Jahnsfelde in the Märkische Schweiz.

Although West German organic farmers fear competition from the large-scale producers in the East, and prices for organically-grown grain have actually dropped, it is likely that the East German organic farms will mainly serve consumers in the former GDR including East Berlin where, until recently, organic produce was hardly available.[7] We will probably be seeing an increase both in the foodstuff scandals of recent years and in the number of people buying of organic products. After all, 94% of all foods contain residues of pesticides and other agricultural poisons. A real change will only come, though, with a radical transformation in consumer behavior: when people decide, for the sake of their own health and that of their families, to stop buying cheaper produce grown with the help of poisonous chemicals.

Such changes can already be observed in Berlin. The number of food coops, at least, has risen rapidly in recent years, and the city now boasts 50 of them, many in East Berlin. In this way, unemployment in East Berlin has been put to "productive" use. These coops usually consist of 10 to 50 people who share a warehouse and the work of buying directly from particular organic farms. By avoiding middlemen the products are relatively cheap for members. A new "South Food Coop" has just been founded: The participants wanted out of anonymous supermarket consumerism, looked for rooms, and got into contact with an organic farmer in Lower Saxony. To be sure, such a food coop means work and organization, but also an end to anonymous shopping. The members now know exactly where their cabbage comes from. Once a month they meet for tea, wine and planning at a plenary session....[8] Organic stands are becoming more common at the conventional outdoor markets and have met with such success that there are now three wholly organic markets in Berlin. Because they are so popular, they now take place weekly.[9]

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[7] See Hubert Weiger, "Ökologischer Landbau heißt der Lösungsweg, " in Grünstift 1, 1994, and Hans-Peter Piorr, "Ökologischer Landbau — auch in Großbetrieben möglich?" in bio-land 3, 1993, pp. 31-34.

This relative success led to the formation of further organic marketing cooperatives, such as the 1991 Märkische Wirtschaftsverbund Berlin-Brandenburg whose members include both Bioland, Demeter and other farms as well as large Berlin natural food companies such as the Weichardt and Märkisches Landbrot bakeries, the wholesale greengrocers "terra frisch" and the Demeter buyers' association. They want to work together to expand the market and offer their products to supermarkets and large-scale food processers. The goal of the initiators, all young people mostly from East Berlin, is "fair prices" for producers.

In 1991 the share of natural products in the German grocery market was only 0.75% or 1.5 billion DM. In Baden-Württemberg, a center of organic agriculture, only 1% of the farms were organic farms. In Brandenburg, however, in 1993 16,000 hectars were already being cultivated according to organic principles. Market researchers predict that the phenomenon of natural food markets will expand. Doubts about authenticity are the main reason people give for not buying the somewhat more expensive organic products. To be sure, the big supermarkets have been using the "natural" label a lot lately without delivering what they seemed to promise. After some investigation, the Berlin consumer watchdog groups have been successful in forcing a number of companies to stop using the label "natural" where it was not applicable. But doubts about "purity" are an age-old "argument" against the reputation of a new product that entails a real transformation in thinking and behavior, and perhaps even a small economic sacrifice. In contrast, the occasional appearance of semi-natural products, as in the recent case of GEHA chocolate, is not so problematic in the end, since they are sold for political reasons.[10] I know that my natural food shops sell fewer suspect goods than the supermarket chains if only because I can ask Ronald or the women from Haferstich where they acquired the products. In doubtful cases, they can ask their wholesalers for more details. When I buy produce through subscription or a food coop I know where the stuff comes from anyway.

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[8] Bio-Direkt — Bio-Bauern in Berlin und Brandenburg. Published by the BUND für Umwelt und Naturschutz Deutschland e.V., Landesverband Berlin, Arbeitskreis "Ernährung und Landwirtschaft" beim BUND Berlin, first edition, 1992.

[9] Leopoldplatz in Wedding, Chamissoplatz in Kreuzberg, Breite Straße in Pankow (the last in East Berlin).

Politicians are of course in a position to influence these developments if they want to: On the initiative of the Berlin Greens (or, more precisely, the Fraction Coalition 90/ Greens/ Autonomous Women's Association), the Berlin state parliament (Abgeordnetenhaus) called upon the Berlin government (Senate) "to encourage more strongly the use by public institutions in the state of Berlin of agricultural products grown in

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[10] Regine Cejka, "Alles Bio, alles Öko, alles Lüge," in Ökotest 3, 1993, pp. 12-17.

Brandenburg, particularly those produced by organic methods.... " They were referring to purchases for cafeterias and institutional kitchens in schools, town halls and hospitals.[11] The Department of Economics and Technology (Senatsverwaltung für Wirtschaft und Technologie) thereupon sent a non-binding recommendation to the state's cafeterias and institutional kitchens suggesting they use local agricultural products from Brandenburg. The Senate denied, however, that organically-grown products were healthier, retreating behind the incorrect assertion that there was no scientific proof.[12] One may assume that many institutional kitchens never even heard of this half-hearted governmental recommendation. Nonetheless it is now possible to eat meals prepared from organically-grown produce at the cafeterias of the Free University in Dahlem.

About 60 kilometers east of Berlin, in the Eggersdorfer Siedlung near Müncheberg, lies the commune Apfeltraum e.V. (Apple Dream Incorporated). The group has two pieces of land and several buildings, in part inherited and in part leased. They have taken over a stall which formerly belonged to the local collective farm. The group consists of a number of young people from East Germany, mainly Saxony. Two couples with several children and their friends form the core of the group. They mainly process windfall fruit into juice and grow vegetables which they sell through a subscription scheme. Other members of the commune work outside, in Berlin and elsewhere, some with the intention of later devoting all their time to the farm. Like every commune they are constantly attracting new people. Members come and go, interns from the Berlin universities come to spend from two weeks to six months and leave again, inspired or perhaps bemused. In the summer, they supply about 60 Berlin subscriber families with crates of vegetables cultivated according to organic methods. They also have a few cows, draft horses and geese.

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[11] Antrag der Fraktion Bündnis 90/ Grüne/ (AL)/ UFV im Abgeordnetenhaus von Berlin, 1 April 1992, 12. Wahlperiode, Drucksache 12/ 1373. See also the press release of 21.11.93 by the member of parliament Hartwig Berger from the Bündnis 90/ Grüne (AL)/ UFV.

[12] Senatsverwaltung für Wirtschaft und Technologie — IV E 1 — in Beantwortung der Kleinen Anfrage Nr. 4141 vom 3.8.1993 des Abgeordneten Hartwig Berger, Fraktion Bündnis 90/ Grüne (AL)/ UFV.

My sister and I paid them a surprise visit one Sunday, since we unexpectedly had access to a car, and met a few of them with three very lively children in the village inn where they were just ordering their Sunday schnitzel. The young mother looked rather exhausted: today was chaotic since people were moving in and out, but then began to talk after all. We were welcome to have a look around the farm. In the garden, next to the strawberry beds, sat Siegfried from the Altes Land near Hamburg who had just built himself a room in one of the half-ruined buildings. His snow-white hair made him look like a seventy-year-old, but from his animated stories he seemed scarcely forty. He shared the dreams of the commune members and was interested in allotment gardening, he told us and helped out even though he was only a guest. He enjoyed telling us about everything and cheerfully posed for a photo.[13]

A few kilometers down the road is a women's communal farm, in Bucholz, another small village in the gentle hill country of the Märkische Schweiz, 5 km by bicycle northeast of the Fürstenwalde railway station, and 65 km east of Berlin. All three members of the community are West Germans, Isred, Ruth and Corinna. Two of them are trained in organic farming and they are much more professional than the people at Apfeltraum. The two founders had already worked on organic farms in West Germany and studied organic cultivation methods, one of them in Waningen, Holland at the only existing teaching farm for organic agriculture. While working for an organic farmer in West Germany in 1991 they had heard that this farm was available and immediately leased it for 20 years. Every Thursday they harvest their produce and pack up 180 subscription crates with 40 different vegetables according to the season, to be delivered to Berlin on Fridays, mainly to women in West Berlin. They bring the crates to various drop off points, such as the women's café Begine around the corner from my house, where their regular customers pick them up. They now work 3 hectars of garden intensively. Through the subscription sytem they have no surplus and the direct contact with customers, mainly women, allows them to distribute their produce themselves without wholesalers. They are thus already independent of subsidies and have managed to pay off most of the debts they incurred taking over the farm. The subscribers also frequently visit the farm to help out. They have managed so far to make a good living, although in the summer they work from 6 a.m to 9 p.m. and holidays are still out of the question. For this reason a number of women have come and gone, and they are looking for new women to join the farm. They have had little contact with the local village population, although they have participated in exchanges of machinery from neighbor to neighbor.

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[13] Visit and discussion, 8.5.1994.

Unfortunately they cannot yet all live together in their half-ruined buildings, which means that they take turns eating together in their various small apartments, which sometimes seems strange to the new interns who arrive now and then for a short stay. Corinna, a former social worker from West Berlin, whom we meet transplanting seedlings, tells us all about the farm with wonderful calm and natural friendliness. While Carola and Barbara overturn a crate of seedlings she immediately enlists our help in planting them in little plastic pots. Together we carry them to the plastic greenhouses, of which only two are standing at the moment since a storm at the end of the winter tore two others down.[14] Despite their success, Carola calculates quickly, with monthly revenues of 1600 DM they hardly have any private income to speak of....

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[14] Visit and discussion, 30.4.94.

From the women's farm we pedal our old bikes against a strong wind in the direction of Bad Saarow on wooded Scharmützel Lake. Our destination is Marienhöhe, the oldest Demeter farm in the Federal Republic, founded in 1928 by Dr. Erhard Bartsch according to Rudolf Steiner's 1924 agricultural discourse [held near Breslau]. The soil is poor, and for this reason the whole project began with the planting of hedges to stop soil erosion. These hedges have a positive effect on the soil climate up to 30 meters on either side. Thus there are many small 2 hectar fields, on which the crops do very well, however. During the Third Reich, Marienhöhe was at first protected by one of the prominent Nazis, Rudolf Hess. From 1941 on, with the so-called "battle of the producers" which the Nazi instituted during the war, times were hard for organic farming. After 1945 a combination of craftiness and the internationalism of the organic farming movement managed to save the farm. First they sold off land in order to stay under the size limit for farms designated to be collectivized, that is, nationalized. When the owners fled the growing difficulties with which the GDR government confronted them, salvation came in the form of people from West Germany who illegally entered the country via the then still green border armed with little valises and the desire to save the farm. That was the case, at least, for old Herr Hoppe whom we met during our visit as he was giving a group of unsuspecting young future health food shop clerks a tour of the premises.

After the demise of the GDR, the founder's heirs gave the farm to a non-profit association, "The Marienhöhe Non-Profit Association for Organic Farming, Cultural Work and Social Therapy in the Country." The association leases the farm to the group active here now. Next to the old and very old members, this group is composed of two groups of newcomers. The first consists of young East Germans who moved here at the time of the GDR civil rights movement in order to escape the constrictions of the system. Many of them come from Saxony, in the Southeast of the former GDR. After the changes of 1989, more young people arrived from Saxony, East Berlin and also West Germany. Today, thirty people live here on a tiny wage of 600 DM a month minus 200 DM for room and board. Since they are practically overrun by interested people and kindred spirits, especially from nearby Berlin, they have instituted an official tour of the farm every fourth Saturday. They cultivate several hectars of market gardens and keep 20 dairy cows, three draft horses, 20 pigs and a few sheep, among other things to assure a supply of manure.[15]

There are a number of other noteworthy initiatives, such as the women's gardening collective in Blumberg near the elevated train station at Berlin-Arendsfelde, where 19 gardeners from Berlin and Brandenburg work and, among other things, offer ecological education for school children at their farm.

A common characteristic of all the groups mentioned here is that they are prepared to live at the subsistence level. Maria Mies, Claudia von Werlhof and Veronika Bennholdt-Thompsen describe the subsistence economy as a way of life based on everyday life and its necessities, and the willingness to limit one's own needs in the interests of other human beings and the environment.[16] The communal organic farmers introduced above have withdrawn from the neverending stress and panic mentality of consumer society, and to that extent have become outsiders. But also pioneers, pointing the way for those around them. The enormous number of visitors and student interns who flock to all three farms indicate that they are seen as forerunners of a development which many more people regard as necessary, and, ultimately, absolutely essential.

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[15] Visit and discussion, 30.4.94.

[16] Maria Mies and Vandana Shiva, Ecofeminism (London and New Jersey: Zed Books, 1993); Claudia von Werlhof, Was haben die Hühner mit dem Dollar zu tun? (Munich: Frauenoffensive, 1991); Veronika Bennholdt-Thompsen, ed. Juchitan: Stadt der Frauen (Reinbek bei Hamburg, 1994).

# WORKSHOP: TRANSFORMATIVE LEARNING THROUGH ENVIRONMENTAL ACTION PROJECT

## CASE STUDY

## FROM SUDAN - AFRICA

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## I- INTRODUCTION

The Sudan is the largest country in Africa with a total area of 2.5 million $Km^2$ approx. It extends from 5°N in 21°N and from 22°E in 38°. Bordered by Egypt in the north, Ethiopia in the east, Kenya, Uganda & Zaire in the South, the Central African Republic & Chad in the west and Libya in the North-west; with a short shore of the Red Sea in the N.E. The White Nile enters the country from South and the Blue Nile from the east (Ethiopia hights) where they have their confluence at Khartoum(the capital). Northward combined waters flow as the main Nile crossing Egypt to Mediterranean. Nile river system consists of many smaller branches & tributaries such as Dinder, Rahad & Atbara from the east, Zeraf Jabel & Bahr el Arab Southwards. This system is used intensively for irrigation specially in Central Sudan. Large tracts in the Northern half are desert or semi desert but rainfed agriculture can be practsed in much of the remainder. (Fig. )

## II- POPULATION AND THEIR SETTING

According to 1993 census preliminary results the pop of the country are 25 million over 2/3 live in rural areas, the majority in small hamlets & village. About 48% of pop under age of 15, 71% engaged in agriculture

7% in industry & 22% in services. Pop. density 12 person per $K^2$, in arable land 65/$Km^2$ varying from irrigated to rainfed lands.

The pop. of the Sudan is characterized by a considerable socio-economic diversity resulting from a complex history through which different groups have been assimilated as well as differentiated. One important dimension of the diversity of pop. in respect of social and economic is that of gender. Here there are great variations as between regions. While in rural areas of southern Sudan, as in most of western Sudan women play an essential role in agricultural activities - while not so in the Nile valley. Since men migrate, most of rural communities particularly in western Sudan have a large no of female headed household. One striking difference relates to education where enrolement rates for girls vary greatly from 80 percent in Khartoum to about 30% in Bahr el Ghazal (1/3 of that of boys).

The economic socio-cultural diversity conditions bring into play widely different political loyalities & ideologies relating to excercise of authority, rules regulating access to land & other resources and to social & economic interaction generally. It remains always a challenge to the governments & whole political systems not only to contain inherent forces of political fragmentation but also to create basis for a politically viable and economically dynamic Sudan.

In Southern Sudan the economy is oriented towards subsistence production based on shifting agriculture & livestock rearing. Though it's the richest part in terms of water resources & animal wealth. The conditions of life have been affected by hazards of nature and tribal warfare and by long periods of civil war the latter one started since 1986. This besides environmental damage has produced massive pop- movement as refugees to neighbouring countries and as displaced within the country particularly major cities (Khartoum, the Capital).

In Western Sudan ( Kordofan & Darfur the pop. are composed of multitude of cribes but economically integrated - cultivators of Goz Land & foot steps of higher lands (Jebel Marra & Nuba nuts). Many specilize in cattle rearing migrating between Bahr el-Arab in the dry season & north of cultivated lands in the rainy season - some rear camels further north. Migration movement is determined by annual requirements of water & pature.

The economic integration in the west is sustained by political systems based on tribalism but operated on much larger sale and greater degree of centralization than in the South. In addition the spread of Islam over 500 years served to form a basis for ideological unity.

In western Sudan a very high level of seasonal & long term migration to employment in modern sector enterprises is witnessed. Since 1980s speed of movement is accelerating most grazing areas affected by drought condition and desert encroachment especially in Northern & Eastern parts.

In the narrow alluvial strip along the Nile an intensive irrigated production system is practised for thousands of years. It is the least affected by environmental deterioration but by land shortage. In the Central Region and parts of Kassala the development of government initiated scheme made it the most successful cultivated experience. It developed as densely populated with many urban-type settlement which continued to attract pop. from the west many work as seasonal labour. The Nile system provided permanent irrigated mechanized schemes. Region experienced rapid development.

The Red Sea area is of low-rainfall supporting a small population which depends on nomadic animal husbandry - with successive periods of drought many settled in Port Sudan the only part & 2nd largest urban centre in the country.

## III ENVIRONMENT, ECONOMY AND FOOD

Geographically much of the central and northern parts of Sudan lie within the Sahelian belt & have been affected by successions of drought in this zone besides significant desert encroachment particularly in western areas. The Western Region of the Sudan is severly affected by the drought which devastated the Sahelian zone across Africa in 1960s & 1970. Resulting in a loss of land for food production and grazing. Average index of food production per capita in the beginning of 1980s was only 93% of the level a decade earlier. Apart from some climate induced fluctuations, most of pop. in traditional rainfed aridland suffer a sort of food shortage before harvest. Yet until 1986 the food situation at the National level was comfortable compared to other sub-Saharan African countries. In 1984 it was considered whether the Sudan is eligible for Food Aid, unfortunately one of the African worst food crisis experienced a little after.

Severe drought years of 1982/83 to 1984/85 were blamed for food cirsis as well as failure to improve eco-situation. However, balanced assessment pointed a number of factors such as mislocation of investment and government policies. Fortunately most affected regions in the country received good rainfall in the last few years allowing good improvement in cereal production through massive expansion of cultivable areas under mechnaized farming.

However food situation seem to be affected by rate of economic growth and pop. balance. The economic growth has been considerably fluctuating since the last decade averaged about 1% per year in compared to pop. grwoth of about 2.9%. The per capita income then declined at an average annual rate of 1.9% since 1980. By 1988/89 the inflation rate increased to almost 70% (over 100% since early 90s). The budget deficit rose to 14% of GDP hence rate of savings & investment declined continuously.

This poor performance of the economy affects food security through its inability to deliver a consistent supply (either through production or import) and through its failure to sustain income & purchasing power. In addition the balance of payments and budget indicates that the government has few resoruces to import food or for programmes to assist the poor & compact food insecurity (World Bank Document).

Due to depressing situation marginal areas are getting worse - shown in increasing rural urban migration, displacement, sharp drop in production of stable food and famines. The severe environmental degradation, (both man made and natural disasters) ineffective conservation policies and legislation besides meagre financial resoruces alotted for environmental conservation constitute the base for environment bankrupcy. Our case study shows efforts in one of the food producing promising areas - efforts for conservation of biodiversity & food production. It is typical of many areas in transitional region which could be saved from bankrupcy & sustained.

A major reason of environmental damages is blaimed for unplanned removal of forest - leading to forest depletion & desert encroachment - Continuous over grazing and soil degradation are clearly shown & the video to teach community how to curb it through prevention of unplanned cutting, encourage agro-forestation rehabilitation and conservation projects. Other factors such as lack of human resources development (literacy) sickness mortality and defficient services.

## El Daen: Environment Conservation Case Study

This case is a unique experiment in environment conservation initiated by the community, protective in nature & well accomodated to address population and natural resources within a wide range of integrated activities. It also illustrates the role of women within their community trying to avoid or protect themselves from environmental hazards.

El Daen province is an administrative unit and a geographical located in southern Darfur, west Sudan. The capital is Daen town. The province stretches between 32° and 35° W and 38.2 & 25.10° East bordered by other Darfur provinces to the east north & west and southern Sudan region southward. Bahr el Arab (a sub-branch of the White Nile) runs between Daen and Southern state of Bahr el-Ghazal. So geographically EDaen lies in the firnge zone between the rich Savanah and subtropical areas of the country, it resembles many areas extending along same latitudes along West Africa. It ranges in climate & vegetation from wet plant covered lands in the south to hight precipitation slightly grass-covered land northwards.

Soils are sandy "Goz" type in the north & east while the alluvial soil prevails southwards towards Bahr el-Arab and a combination of silt and sand exist westward. Natural vegetation is mostly acacia which is giving way to semi dry types northwards.

Conditions are favourable for sedinetary agricultur in most of the province but underdevelopment of permanent irrigation system allow only cultivation of grain cereals such as durah (stable food grains) sesame and ground nuts.

About 80% of working population (total pop ½ million) are engaged in animal rearing and husbandry. They own around 80% of the total livestock in the Darfur state which is estimated to be 2 million cattle & 200,000 sheep & 250,000 of camel. This enormous animal wealth mainly reared on rich natural vegetation cover & during the dry season animal herds are driven to the river bank until rain water & vegetation cover are enough to support them northward. Besides the region possess a rich natural resource base, a wide range of natural wealth in form of many types of forests and wild life.

It is noticed in the last few years that the local environment started to undergo some changes after years of drought hit hard on neighbouring regions in northwards that desert encroachment to the north & east is affecting the richer region. Migrants from the north came with their animals to share their pastures. Many started to cut trees & burn for fuel to be solid in other areas, even huge acacia green trees like Aradeib & laloub are being cut & burned. This became a source of income & sort of work irrespective of its fatal results. Thousands of miles of shrubs and smaller trees are cut. Desert encroachment is felt in the north vicinity. With movement southward wild life is disturbed besides illegal hunting. Many types of animal & birds are disappearing.

With initiation from community leaders a branch of Sudanese Society for Environment conservation was formed. Some professionals started organized awareness raising cambeigns. Proposals were made to some International NGO's to fund these cambeigns. A workshop was organized to discuss the issue of conservation and to put a plan of action. (video-tape)

The workplan included a code of behaviour towards all living creatures and species. It is referred to as Daen environmental laws. Some are extracted from institutional laws of Environment Conservation unknown for the community. They were classified into (3) groups dealing with trees, animal (wild life) and grass & shrubs (Biodiversity).

This code probibits strictly the following actions:
Cutting of green huge trees (this is already strictly forbidden by provincial Act since 1983.
Burning of green huge trees for whatever reason (fuel, animal fodder or fencing of cultivated areas)
Cutting trees along water bodies
Fire under trees and within bushes & grass rich areas
Illegal unauthatized hunting
Hunting of certain species such tigers
Use of certain traps types for hunting of wild birds.
Violation of any of these act expose the person or group of people to punishment firstly by community (through biocutting no collaboration with herding or cultivation) and by authorities (through court procedures) as shown in the video tape.

A parallel activity concentrated on women role in environment conservations. Though it is of a very limited scope it is a very good experience in view of the nature of the initiative and the local socio-economic conditions. Women were involved in securing food water supply and household hygine as they have a vital role in the informal management of these resources. Women started to exchange experience in ways & means of preserving food for the dry season (mainly sesame, ground nut cakes & dura the staple food grain). It is proved scientifically that local food made from seed cake of these grains can be stored indefinately without deterioration, the thing which represent a useful and inexpensive food preservation technique well suited to this part of Africa (Alfaki et al, 1991).

Women though were not actively involved in the planning process they were active part in real action. They were able to absorb ways & means to use water resources economically, to keep their immediate environment clean by fencing animal areas apart from living space. Then accessibility to health services improved through awareness raising. The activity is noticed to affect positively their attitudes towards education. In Daencity, some of them started attending literacy classes. Unfortunately due to objections from community leaders it was not possible to photograph them to be included in the video-tape.

Women's role is expected to be more strengthened with involvement in all different conservation activities and with proposed establishment of a women desk in the society branch with better organization women's role as activitist will be better visible than being recipient.

Learning practices by women are clearly different than those of women by virtue of different fields they are working on especially in towns and villages where they are more confined to traditional women areas i.e. family & home. Secondly any new or challenging experience has to build on indigenous practices and develop the and the head gradually towards introducing new initiatives and innovations. So women practise build on improving traditional roles and are planned to proceed to new (non traditional) practices in further stages. Although methodologies are crude and lacks professional touch.

This type of learning is considered transformative as this like continuing learning starts with people initiatives&their own concern with their environment. It is informal beginning with daily experience of the local pop. though this experience is not well-documented from the professional point of view yet. It gives a good base for transformative learning through self initiated environmental action. A neighbouring region applied to form a branch of the society, to organize themselves to do similar environmental action. The work of the society attracted official support from governmental bodies and some funds are received from local organizations to support the work. These are some proofs of a process of transformation taking place.

On the other hand this transformative learning is of a protective nature aiming to avoid environmental degradation especially desert encroachment. It is beneficial to the whole community. It teaches them what practically sustainability means - how to secure it through wise environmental action. Women in particular through learning & through proper use of the environment can save much of her time, can feed easily her family, can live healthy and find time to educate herself. Because the volume of work is reduced, journey to get water & fuel is not longer a basic life necessities are secured. The basic learning material is the video-tape and some slides & pictures. Songs are used in rural areas as well as group meetings in nomadic areas.

In my opinion as women feel deeply the impact of environment deterioration suffer from food shortage, men migrating leaving for them whole family responsility. They respond to any effort done to help them improve living conditions through protective action. In other wordsthey work more than they do organize or teach like men. They are more practical and positively participating. The team work nature is more evident as they are aware that there is need to preserve the existing flora and fauna for the benefit of the whole community & there is no after native for them. The ongoing experience from community initiative & involvement, skills acquired through specific activities and acquisition of safe sustainable living are the most 'sustainable' aspects of the case.

A lot of discussion is recently taking place during any academic gathering or even in classes. Specially in workshops seminars & conferences dealing with every issue in population, development & environment gender & gender issues are central. In education institution they include educative elements on environment and the political economy. People in academi & at least do understand structures&practices which stand on the way of ful participation of women but politicians & policy maker do not either understand or are not convinced that more participation of women would lead to better improved environmental living conditions for the whole society.

The type of learning can take place in other countries of comparable conditions, geographically and socio-economically. It offers better understanding, initiative and encouragement to work for envionment conservation. For uncomparable conditions the essence of the work could be inspiring besides it teaches them how other are working and suffering to secure mere necissities i.e. better life conditions through sustainability.

Case Study Brazil:

# WOMEN IN CITIZEN'S ACTION:

## In the struggle Against Hunger and Poverty and in Defense of Life

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## I. For a starter, let's meet three people:

### I

Marli Feitosa, who is 28 years of age, has five children ranging from two to 11. Her six child, has just died of an intestinal infection and pneumonia, which were complicated by chronic malnutrition. Her oldest daughter used to watch the baby while Marli left home every day to work as a cleaning lady in middle-class homes.

Marli has no husband and earns between one and two times the minimum wage (between US$ 66 and US$ 132 a month). In order to support her family, she also works on Saturdays, Sundays, and holydays at an ice cream in her neighborhood. During her free time, she keeps house, cares for the children, and takes part in activities at her church, which earns her a basic breadbasket once a month.

All of her hopes are now invested in a community vegetable garden, where she works several hours a week. *"If I stopped to think that everything was going to go wrong in my life, I would no longer be here on this Earth"*, she ponders.

Marli, whose mother came from the rural northeastern state os Alagoas when she was a child, knows virtually nothing about growing vegetables. Unlike her mother, who was brought up in the countryside, what she was familiar with is the tough reality on the outskirts of cities, where she works all day long to be able to eat at night.

### II

At the same vegetable garden, Maria Senhora de Oliveira Pereira, 55, has a different background. Living in a nearby slum since she arrived 18 years ago, she grows a lot of things in the lot around her house: banana, manioc, and chavotes. Dona Maria and her husband have migrated from state to state of Brazil in search of land to farm. The last place they lived before they came to this slum was the state of Paraná, known for its single-crop export agribusiness (corn, soybeans, and wheat).

Dona Maria's husband worked for several years spraying pesticides on these crops. As a result, the poison has attacked his central nervous system. Since failing ill, he has spent more and more money on medicine ans has to wait days on end in line at INSS, the government agency in charge of social security /public health care in Brazil. Since he got sick, he has been unable to find another job. Even so, he has still not obtained his retirement benefits.

Today, Dona Maria cooks for the Neighborhood Association while her husband sweep the streets. She has found recollections of her time on the farm: working the land, having plenty to eat, with lots os medicinal plants and nutricional food, like taro, purslane, sow thistle, yams, and mustard greens, which grew wild and were often used in meals and home remedies. Dona Maria would like to share this traditional knowledge with others, as she says:

*– The problem is that my seven children grew up in the city and don't want to eat "weeds" any more. They prefer the colorful food they see on TV.*

### III

Carlos Dias, age 28, came from Itabuna, in the state of Bahia, two years ago, chasing the pipedream:

*"They told me you could just rake in money here"*. He sold everything he owned and came to the big city with his wife and three children (four more stayed in Bahia). As soon as tha got to the city, he realized he had been fooled. The money he thought would be enough to buy a house was spent on the first few months os sky-high rent. He worked as a night watchman for a year. When there was a mass layoff, he got fired.

As his financial situation got worse and worse, he decided to set up a hotdog vending stand. He was robbed and lost the rest of what little money he had left. The family went to live in the slums, and he started doing odd jobs.

Meanwhile, his wife managed to get a job as a maid in a luxury hotel. Today, with their roles reversed, Carlos divides his time up between caring for the children and fixing electrical appliances, doing housespainting jobs, and minor home repair work, which he does in the neighborhood. Whenever he can, he comes to work in the community vegetable garden.

He is visibly unconfortable with the situation. After all, he was brought up in a world where the men go out to work and the women stay at home. But he thinks this has served as a lesson, even in the vegetable garden, where he could never have pictured himself.

*– My mother knew a lot about the vegetable gardening, but I never gave it a thought* - he says.

*These three people are among the 14 million inhabitants of the city of São Paulo, the largest in South America, capital of the state that produces 60% of Brazil's GNP and epicenter for the Brasizilian development model over the last forty years.*

## II . Hunger in a Land of Plenty

Is it justifiable to supply a population with information, but not with food? Brazil had enter headlong into the Informatics Era: over the last three decades the country has set up a gigantic telecommunications network as a geopolitical strategy to develop a sense of nationality and to mark off occupation of its vast territory. Today, 21 million TV sets are tuned in daily to all the wonders of the market economy, with enticing products pushed by attractive commercials. Still, the country has failed to reach a minimum level of development, to guarantee food for 32 million destitute citizens, one-fifth of its total population.

Ever since the Portuguese reached the South American forests and were amazed by the continent's fertile lands, it has become commonplace to parody a phrase by one of the navigators, Pero Vaz de Caminha, who said, *"whatever who* *plants here will bear fruit*". In Brazil, a country with a territory of some 8,5 million square kilometers, a huge diversity of ecosystems, enormous tracts of arable land, an abundant water suply, and a tropical climate, the above maxim virtually became law. That is, until we awoke in the 1990's to face a bitter truth: in a land of plenty, there is hunger everywhere!

To show the true face of development in Brazil has been the task of Citizen's Action Against Hunger and Poverty and in Defense of Life, or as it has come to be known, the "Campaign Against Hunger", a gigantic movement which has already mobilized some 2,8 million volunteers, both women and men, people from different kinds of backgrounds , businesses, government agencies, political parties (which are sometimes on opposite sides of the fence), and all different religious denominations. Some three thousand local committees have been set up around the country, in an enormous contingent, the largest movement in all of Brazil's history.

In addition to the immediate need to feed 9,2 million families living below the poverty line, this campaign has revealed all the hardships caused by the pathway taken by the country's elites in their eagerness to be part of the First World. In addition, the movement has played a major educational role by showing that citizenship is not won just by holding free elections, but that people's basic needs must be met: to work, to eat, to clothe oneself, to have access to school, heath, and recreation, and to have a share in collective decision-making.

## Statistics on Hunger in Brazil*

Here are some of the figures showing the real face of the development model installed in Brazil, which is now bearing its rotten fruit:

**- 32 million people living bellow the poverty line, that is:**

**- 9,2 million families**

**- 46,9% of this destitute contingent are made up of children and adolescents**

**- one-third of these families are headen by women**

**- one child dies every minute from diseases caused by hunger**

**- The most heavily affected areas are the outskirts of major cities, mainly São Paulo, Rio de Janeiro and Recife, and the hinterlands of the Northeast.**

** Official government data provided by IBGE, the Brazilian Geographical and Statistical Institute, and IPEA, the Institute for Applied Economic Research.*

## Statistics on Solidarity Through Citizen's Action*

On the side of life, the Campaign Against Hunger also boasts encouraging statistics:

**- It reaches all 27 states of Brazil**

**- It includes 3,346 committees (this figure is an estimate, since many initiatives have occurred spontaneously and thus go unrecorded)**

**- Some 2,8 million persons over the age of 16 are directly involved. The largest contingent is that of women from 25 to 39 years of age (32% of the total).**

**- Some 21 million people have donated foodstuffs and clothing .**

**- A total of 3,5 million have donated money.**

**- According to an opinion pool, 93% of the population approve of the campaign.**

**** Data furnished by IBOPE, the Brazilian Public Opinion and Statistic Institute.***

## III. Where Citizen's Action Came From

All of this emerged from a huge grassroots mobilization called The Movement for Ethics in Politics, which led to the impeachment of former President Fernando Collor, the first president elected by popular vote after 20 years of military dictatorship and deposed under accusation of corruption.

In late 1992, the idea of continuing with this grassroots mobilization came from IBASE, the Brazilian Institute of Social and Economic Analyses, a nongovernmental organization in Rio de Janeiro, whose executive secretary is Herbert de Souza, or Betinho, now a symbol of the Campaign.

Betinho has good reason to be more popular than TV stars and to be envied by Presidential candidates. Persecuted by the military dictatorship, he lived for years in exile, mainly in Canada, where he received his PhD in political science from York University, in Toronto. Although he was outside of Brazil, he was not forgotten, having seen honored in cartoons by Henfil, his brother, and lyrics by singer/composer Chico Buarque de Holanda. Once back in Brazil after political amnesty, Betinho caused a national uproar when he denounced that he had contracted the AIDS virus through a contaminated blood transfusion. This helped fuel the debate on AIDS outside of the traditional risk groups: homosexuals and IV drug users. Betinho, like this brother Henfil, who has already died, is hemophiliac.

Betinho justifies the choice of hunger as the theme of the Campaign:

*-- To discuss the social issue in Brazil from the point of view of employment, healty conditions, income distribution, or any other perspective could cause disagreement right from the first moment. Hunger puts people together on common ground.*

The February 1993, this idea made it to the Presidential Palace in Brasilia, the country's capital, at the initiative of Luiz Inácio Lula da Silva, president of the Worker's Party. During an interview with the Brazilian President Itamar Franco, then in the firs days of the administration following Collor's impeachment, the Worker's Party proposed an emergency plan to combat hunger.

This initiative later became the national campaign thar we are reporting on here, which is led in part by civil society through Citizen's Action and in part by the government, through its Plan to Combat Hunger and Destitution, launched in April last year.

Although the government plan intented to feed 50 million people in a joint effort involving the Ministries of Education, Health, and Labor, a year has gone and the Plan has not made it off the paper it was written on.

In the opinion of Luiz Eduardo Carvalho, president of the Latin American and Caribbean Association for Food Science and Technology, "onde of the common faults permeating government programs is to disregard the opportunity to make the state's purchasing power a social tool for intervening in the causes of hunger and destitution, which are related precisely to the production and marketing system for basic foodstuffs".

This purchasing power would create opportunities of job and strengthen local and traditional economies. But the historically centralized activity of the Brazilian state has turned the plan to combat hunger into just one more profitable business for big monopolies. What is more, it is a prime example of waste.

On the nongovernmental side, the Campaign is bursting with creativity. Here are a few of its amazing characteristics, in the opinion of Rubem César Fernandes, director of ISER, the Institute of Studies on Religion.

- The Campaign is aimed at individuals. It is not addressed primarily to large structures, although it is mobilizing them, too. Yet it appeals to persons, to their individual consciousness and sense of citizenship.
- It touches on the relationship between civic and moral awareness.
- It provides an opportunity for voluntary action, emphasizing the emergency side of hunger (i.e., the state of emergency) rather than the paternalistic view of minimize the problem.
- It creates new institutional partnerships within civil society, putting a neighborhood association of a metropolitan area on equal footing with the board of directors of a big business (something that would be unimaginable in any other movement or political context in Brazil).
- It places the phenomenon of social exclusion on front stage in the public scenario.
- It works with a unifying strategy, doing a critical reading of Brazilian development model based on an effect rather than its causes. All previous attempts to attack the causes of hunger led to constant controvery and impasses.
- It indentifies indifference as the number one enemy in the struggle against hunger, showing that indifference fosters the habit of thinking that hunger is a structural problem against which we are all powerless, and that it is beyond our reach as individuals.

The Campaign works along three main lines:

1. Solidarity, to attack the emergency problem of hunger;
2. Self-sustainment; and
3. Political pressure, to attack the structural dimensions of hunger.

Citizen's Action has arised creative solutions based on the following:

1. Descentralization;
2. Recovering local values, and
3. A search for alternative solutions.

The newspaper Primeira & Última (First & Last), the main media vehicle for the Campaign, has reported on numerous successful initiatives, including handicrafts production, collective housebuilding projects with donated materials (on a "barnraising" basis), educational activities and integral health care for street children, collective work shops, activities for generating jobs in local governments in the interior, community vegetable gardens, and recycling of organic and inorganic waste, amongst others.

All social sectors are called on to participate, resulting on donations of box office receipts from jogger teams, benefit shows by popular musicians, free airing of video clips against hunger on television, and mobilization of employees from state-owned banks and agencies, who have provided not only food but also funding for projects to make numerous other initiatives possible. Even one segment of business representatives ha come involved, known as the National Thinking of Local Business (PNBE).

One of the bridges between government and civil society in the two prongs of struggle against hunger has been the National Council for Food Safety (CONSEA), planned as a forum for dialogue between eight ministers and 19 representatives from civil society, at the Municipal, State, and Federal levels.

Food safety was defined by the coordinating body of Citizen's Action as a way of guaranteeing that all Brazilians have the food they need, and that the supplu should be:

- Sufficient to meet all needs;
- Stable, so are not be spoiled or decreased during the interharvest seasons;
- Autonomous, that is, produced in Brazil, whitout needing to be imported;
- Sustainable, that is, that is not destroy the environment;
- Equitable, to guarantee access to quality food in the necessary amounts for all Brazilians.

Thus far, CONSEA has only held one meeting, where Betinho pointed out the government's limited interest in participating. It is the responsability of CONSEA to discuss public policies for combatting hunger, including issues ranging from agrarian reform to food standards for the school lunch program.

In order to provide CONSEA with accurate data ont what society thinks and does, Citizen's Action is organizing a number of conferences at the Municipal and State levels and wich will culminate in the National Conference on Food Safety, to be held in late july this year.

Along with these activities - through Citizen's Action Against Hunger and Poverty and in Defense of Life - groups, organizations, and individuals working towards new development models have had the opportunity to launch innovative ideas, put projects for change into practice, and give totally new concepts to this Campaign.

## IV. The Role of Rede Mulher (Women's Network) in Citizen's Action

Rede Mulher plays an active part in this Campaign, basing its action on an educational exercise, namely, bringing two essential binomials into the political arena:

- **Hunger and Environmental Degradation; and**
- **Hunger and Subordination of Women.**

Serving as a network of services in popular feminist education, Rede Mulher reaches and interconnects some 3,000 individuals and groups from various parts of Brazil. Created in 1980, Rede Mulher obtained formal status in 1983 as a nonprofit, nongovernmental, nonpartisan, and nondenominational organization.

Rede Network has the characteristics of a training school with two priority programs:

- Environmental education from a gender perspective; and
- Women's rights as human rights.

The aim of Rede Mulher is to promote education for new relations betweem men and women in all spheres of life and in all organized areas of society:

- Bolstering women's self-esteem and self-organization;
- Collaborating in their training;
- Facilitating income-generating activities; and
- Providing consultancy to create and manage organizations and projects.

In addition, it seeks do deal with gender relations as a issue for everyone, men and women, which should involve all segments of society (social movements, NGOs, universities, churches, political parties, businesses, the media, etc).

From de begining, Rede Mulher realized the enormous educational potential of the Campaign Against Hunger, because we realize that when we talk about food, we are dealing with an issue that has concerned women historically: the reproduction of life.

Thus, not could be more appropriate in this area than to listen to and include contributions by women on proposals for action with men in search of new forms of organization and living in society.

Our interest in working with tue educational dimenson for new relations between genders and with nature became evident with the first more general data: the map of hunger, the map of unemployment, and the map of solidarity.

It was thus easy to observe that women are on the two ends of Citizens' Action: dividing up and distributing , on the one hand, and receiving, on the other. We are the majority of those who roll up their shirt sleeves and pitch in to make food reach the hungry, to find jobs for the jobless, and to promote self-sustainment for those living off the crumbs of society.

On the other end, we are the majority of the contingents who receive donations, seek training, and attempt to manage life in the communities.

Therefore we feel that is opportune to develop our activities and reflections within the Campaign by dealing with phenomenon of feminization of poverty and recovery of diversity (not just biodiversity, but also socio - and ethnodiversity). We believe it is essential for Citizen's Action to touch on what we see as the pillars of the techno-patriarchal system that generates hunger and destitution: the unequal relations between men and women caused by the imbalance between production and reproduction as an inherent binomial in the imbalance between human kind and nature.

In this sense, Rede Mulher had already held training workshops under the Program on Women, Environmental, and Development, set up in collaboration with other three Brazilian NGOs and sponsorship from UNIFEM, the United Nations Development Fund for Women. This areas for non-formal education provided for by the training workshopswe held dealts with themes such as biodiversity, alternative food production and consumption, and the major issues debated by women during the Rio 92 Conference.

From the begining, our involvement in the Campaign Against Hunger was marked by our option of dealing with hunger in the three dimensions developed by the Campaign:

- solidarity;
- self-organization; and
- political pressure.

**Solidarity** is seen here as the immediate, emergency solution to hunger through donations of foofstuffs. At first, it was very difficult for organizations (particularly those on the Left) to accept the discourse and practice of distributing food. There was heavy resistance to this kind of attitude, which had always been seen as paternalistic and more appropriate for charitable institutions.

Betinho had the following to say about the issue:

*– All my life I had struggled for structural changes. What for? To reach the age or 58 and find that we have 32 million destitute Brazilians? I fear the kinds of solutions what do not face the challenges of emergencies. Besides, I have never seen a beggar turn down a plate of food.*

In addition, while the latter two dimensions of the Campaign are stressed by the leftist groups and NGOs involved in it, common citizens are touched more by the issue of solidarity, since they are not so interested in the political implications of their gesture of donating food.

Our team at the headquarters of Rede Mulher in São Paulo has preferred not to deal with hunger in a fragmented way. We believe that the emergency must be deal with even while we search for structural solutions to the hunger problem.

In November last year we organized a committee wich has worked on the three fronts all along. We established a bridge between middle-class schools and committees from middle-class apartment buildings and committee against hunger set up by the Neighborhood Association from Jardim Kagohara , on the outskirts of the city o São Paulo, which receives foodstuffs and resources.

Every month some 600 kilos of nonperishable food, clothing, and shoes are sent there. Thus far, a total of 50 families have received four thousand kilos of foodstuffs, clothing, shoes, and toys.

**Self-organization** occurs through two quite distinct kinds of attitudes: in one hand, we supply groups and organizations from the interior of the country with relevant news on the Campaign. This has facilitated various contacts which subsequently led to practical initiatives, such as forming a new committee or creating new interfaces between these groups and businesses or public agencies.

In addition, we seek to create feasible alternatives for eradicating destitution, through training and income-generating projects, consultancy for creating new organizations, and management for groups and communities. Such initiatives seek to obtain full citizen's rights for women, and they occur as part of the work done by Rede Mulher and not just in the specific context of our actitivity in the Campaign.

**Political pressure** is carried out through our articulated action with all other social sectors demanding public policies aimed at the population's welfare and quality of life.

Rede Mulher is affiliated with the São Paulo Forum of NGOs and the State and National Coordinating Bodies for the Campaign Against Hunger. It is also participating in preparations for the 1st National Conference on Food Safety, planned fot July this year, a process which involves regional and State meetings where we present proposals from the women with we work.

We are also at the service of the Campaign for publicizing data, encouraging reflections, and working with the issues of hunger and food alternatives in all of our activities, which encompass some three thousand groups and individuals from around Brasil. The struggle against hunger is highlighted in the bulletins, publications, workshops, and talks produced by Rede Mulher, which leads to a considerable multiplying effect.

As a direct result of our working in disseminating data and networking, other committees and citizen's actions have originated in various states of Brazil, much information has been passed on, and groups have articulated for the preservation of biodiversity, recognition and renewed use of medicinal and nutricional plants traditionally used in Brazil.

In all of this areas, as Rede Mulher, we do our reflection on an essential trilogy: hunger, environmental degradation, and subordination of women./

## V. Jardim Kagohara:
## An anti-model for urban settlement

Jardim Kagohara, like so many other neighborhoods on the outskirts of the city of São Paulo, sprang up through clandestine low-income land occupations along the banks of the Guarapiranga Reservoir, which supplies water for four million inhabitants int the city. Like all clandestine land settlements, it had no basic sanitation, streets, or any other kind public infrastructure (transportation, public health clinics, daycare centers, or schools).

As told Iza Cardelíquia Berbem, one of the leaders of the Neighborhood Association who has lived there for 18 years, the first inhabitants had to fight for all the public services now avaliable, like running water, electricity, transportation, daycare centers, and schools. The country was in the grips of a dictatorship, and in order to organize, people relied on the protection of the Catholic Church. A number of political movements flourished, like the Coast-of-Living Movement (later known as the Movement Against Want) and the Movement to Struggle for Daycare Centers, in which Iza played an active part.

These movements bore the strong mark of opposition to the dictatorship and struggle for quality of life. But according to Iza, they did not adequately deal with the environmental issue. As a result, the neighborhood now essentially has the infrastructure for which her group struggled so hard. But this does not mean that there was a substantial improvement in the people's quality of life.

The best example of Jardim Kagohara 18 years ago, when Iza went to live there, is the clear water spring where the women used to fetch water. Jardim Kagohara is located in an area full of springs. When running water came to the neighborhood, the spring was forgotten. When the neighborhood filled up with people, the place where the spring use to be, an area marked off by the city government, was invaded and turned into a slum.

The slum was named Botucatu Alley, where the majority of the families live that now receive donations from the Rede Mulher committees through Jardim Kagohara Neighborhood Association. Where there used to be a clear-water spring, there is now a garbage dump full of sewage. From that open-air garbage dump flows a stream that runs right into the reservoir supplying water for four million people, including the inhabitants of Botucatu Alley.

Iza Cardelíquia suffered a tremendous shock when she visited the installations at the central water supply company in São Paulo. She realized the amount of chemical products that are poured into the public water supply every day to purify it. It is a highly expensive process used to provide water of mediocre quality. All this because the situation repeats itself around the reservoir: where there used to be clear springs, there is now a helter-skelter urban settlement producing garbage and sewage that contaminates the drinking water in the reservoir.

The observation that the struggle for urban infrastructure and services is also an environmental struggle led to formation of the Union of Popular Movements for Environmental Education (UMPEDA), which brings together organizations from around the Guarapiranga Reservoir. Iza Cardelíquia is a part of this Union.

One of the actions carried out by UMPEDA years ago was a clean up campaign in Botucatu Alley. During her contact with the people from the slum, Iza observed something else:

*– I discovered that the rats harm people less than hunger, unemployment, and violence. People were only living there because there was no place else to go. That was when I realized that we cannot deal with the environmental problems without considering the people. We have to consider the environment together with the people.*

## VI. Learning in Partnership: The Jardim Kagohara/Rede Mulher Project

The proposal for a community vegetable garden emerged from the search for a way to cover the three dimensions of Citizen's Action and focus on environmental and gender-related educational aspects, the reason for being of Rede Mulher.

The project was divided into various component sub-projects:

**Sub-project 1**: Solidarity, to guarantee that the Jardim Kagohara group continue to receive and distribute donations.

**Sub-project 2**: Self-organization, through collective gardening, to cultivate a vegetable garden without pesticides or chemical fertilizers.

**Sub-project 3**: Self-sustainment, to produce and distribute multimix flour with ingredients from the vegetable garden, to be used as a nutritional supplement for families enrolled in the project.

The first household survey done by Rede Mulher and the Jardim Kagohara Neighborhood Association to define wich families would receive basic foodbaskets showed that of the 36 families, 20 were headen by women. Single mothers, widows, or women who had been abandoned by their husbands, they have an average of four children and survive on an income of one minimum wage (some US$ 66 a month). In general they keep house and care for their own children, work as cleaning ladies in middle-class homes or do part-time informal work like sewing, laundering, and cooking. They are self-employed and in general have no social welfare benefits.

This agrees with the data raised by Citizen's Action: that one third of the families living bellow the poverty line are headed by women. The majority of them receive no support from their former husbands or from social welfare to support themselves and their children. The majority work in the informal services sector. In general, they earn far less than men for the same work. Note then distortions in the average wages between men and women, whites and blacks:

### Average wages in São Paulo

**White men: 8.1 times the minimum age**

**Black men: 4.3 times the minimum age**

**White women: 4.6 times the minimum age**

**Black women: 2.6 times the minimum age**

This phenomenon, known as the feminization of poverty, is not exclusive to Brazilian women. It occurs all over the world, even in wealthy countries, as a consequence of economic adjustments that have brutally concentrated income, particularly since 1980s.

Through their meetings, women from Jardim Kagohara began to perceive that their abandonment is the face of destitution was morte than just an individual problem. According to Iza Berbem, who has vast experience in the women's movement, it is important to invest primarily in women:

*– When the going gets rough, the man splits and leaves the woman behind to struggle to feed the children.*

It is easy for women to see the space they have occupied in production, leaving the house to earn money. It is also easy for them to see how hard it is for their husbands and sons to overcome the psychological condition of seeing themselves as exclusive family providers. Even when men are unemployed, they maintain their stance as heads of families and feel it is below them to become involved in reproduction of life (i.e. caring for the children, doing housework. etc). When they lose their jobs, they generally become violent, turn to drinking, and/or abandon their families.

To realize that this abandonment is not just a personal case, but it is related to the social structure that leads to social exclusion, has been an intense learning experience for the women who sign up for the community vegetable garden.

Therefore, Rede Mulher has organized workshops on women's rights as human rights, to allow for these women to reflect on the reasons for the general abandonment they experience. To realize that they are not alone and that their fate is due much more to the unequal opportunities in social relations and between men and women than to their personal incompetence raises self-esteem of these women and their ability to struggle against hunger.

Following the decision to plant the vegetable garden (a decision made by the group who receives the breadbaskets) came the details on who would do what. With advice from Rede Mulher and the Neighborhood Association, the families began to do a survey of their needs in order to pursue their objectives: where to obtain a plot of land, tools, water, fertilizer, and seeds? Who would do the work? How would the produce be divided up? How big a garden would be needed to feed 60 families? How to continue with the garden if there were no surplus produce?

As the questions appeared, mainly during meetings held in the evenings, people began to gain awareness of both difficulties and possibilities facing them. They began to seek help from committees against hunger and the local community.

According to social worker Marta Lara, member of the central staff at Rede Mulher, this was one of the main lessons in creating the community vegetable garden.

*– People still have the notion that we are doing the same thing that the "benevolent state" would do. There is a culture of passivity which we are trying to change. Citizen's Action has shown that it is possible to establish an appropriate channel for communications between people living in destitution, public agencies, and businesses. It is possible to all join together to visualize and try to solve problems. Since nothing can be expected from official policies, people have to exercise their ability to converse, pressure, and bravely conquer their rights.*

With this initial effort and the constant presence of "advisors", the group redoubled its efforts and obtained major gains: the Jardim Herculano Neighborhood Association, from the neighborhood bordering on Jardim Kagohara, ceded a plot of land measuring 1,500 square meters. The public clinic next to this land provided the water. The head of nearby daycare center cedec more land for gardening. After some negotiating, employees from the electric utilities company, who also have a committee to combat hunger, supplied the materials to fence off the land. At this stage, the following social actors were already involved in the vegetable garden: Rede Mulher, the Jardim Kagohara and Jardim Herculano Neighborhood Associations, the municipal daycare center, the public health clinic, the electric utilities company, and the local population benefitting from the project.

A campaign was then held to clean up the plot of land and fence it off. The State of Secretariat of Agriculture was contacted and provided the seeds. It is also promised to send an agricultural agent to visit the garden and follow up on the activities. This was where a new stage of the work began: to learn how to say, "no, thank you", and remember to defend the environment over the long run. Together with the agricultural agent came a load of sacks of chemical fertilizer. The agricultural agent patiently explained to the local population that a conventional garden would provide much quicker yields.

The argument did not convince the leaders of the movement, who had already learned that quick-and-easy solutions are not always the best solutions. These people recalled what the garden was all about: to produce healthy vegetables to go into the multimix flour. With chemical fertilizers and pesticides, this would be impossible. The group opted for the flour, and the organic vegetable garden won out. Both the chemical fertilizers and the agricultural agent were sent back.

This was where the cottage production of multimix flour came in. This flour is a mixture of rice and wheat bran, dried and ground dark-green leafy vegetables, and roasted, ground seeds. It is based on the multimixture concept developed by pediatrician Clara Takaki Brandão, stressing the quality and variety of foodstuffs, particularly those that are available locally and have high nutritional value and are low-cost.

Publicezed mainly by the Catholic Church's Healthy Ministries, this formula has been used sucessfully by some one and a half million Brazilian families. The Free School for Ecological Agriculture created the flour, a mixture that blends all of the ingredients into a single product. The flour has also been identified by researchers as effective in treating malnutrition and to replace the micronutrients and vitamins thar are missing even from supreprocessed industrialized foodstuffs.

The following are advantages of the multimix flour over synthetic additives used in industrialized foods:

- It uses parts of foodstuffs thar are often traditionally discarded. For example, rather than using just the squash itself, it includes the leaves, blossoms, and seeds, which contain vitamins A and C and Calcium in higher concentrations that those found in conventional vegetables.

- It can be produced with simple, accessible processes, like grinding, mashing, drying, and blending. Since it does not require sophisticated technology, it can be produced by anybody without incurring any major cost.

- It values vegetables that are familiar to poor people, like manioc, squash, and sweet potato and seeds that are rarely incorporated into daily diet and are generally thrown into the garbage, like water melon, squash, and melon seeds.

- It recycles parts of grains that are generally discarded, like wheat and rice bran.

People who publicize the use of multimix flour often stress that is not just a palliative to relieve the hunger of the poor. It is also an effective nutritional tool for the rich, who eat a lot of food with low nutritional value. For the rich, multimix flour is a source of nutrients thar are absent from their daily diet.

What is at stake in this proposal is the group's self-sustainment, which will have to prepare itself for the following tasks:

- to produce the product for sale, thus generating income for their families;

- to develop a view of a bigger picture, to be able to plan, an a step-by-step view, to be able to carry out the plan;

- to manage needs, establishing criteria for working in the vegetable garden and benefiting from its produce;

- to make decisions based on group consensus and to assume responsability for those decisions;

- to develop self-confidence to negotiate projects and produce; and

- to develop technology for the production, storage, distribution, and marketting of this product.

At this stage, a major portion of these skills are being developed by leaders of this process, mainly with the "advisors". Ivone de Mori Lopes, an agricultural expert and employee of Rede Mulher, is one of these leaders. She began working at Jardim Kagohara to help in the decision-making process on what to plant and how to plant.

Ivone reports that is was her first opportunity to work in her area of training, since although agricultural schools have begun to admit women, there are difficult barriers to overcome in finding jobs.

To open agricultural schools to women was difficult, since agronomy is still considered a man's profession. Since the agricultural schools are located in rural areas and have boarding students, the presence of women has led to some embarassment. The main excuse was related by possibility of sexual contacts among these young people and pregnancy for the young women.

Once the obstacle had been overcome, the next step was to challenge the prejudice preventing women from entering the labor market. Ivone went for four years whitout finding a job as an agricultural agent. She worked as a secretary until she was discovered by Rede Mulher. She was not very familiar with environmental management techniques, and is going through a new learning process which has led her to gather information, process it, and pass it on to the Jardim Kagohara group.

Her biggest challenge has been to find the appropriate kind of language to pass the information on:

*-- Peope here have a very direct way of saying things. I realize now how teachers at agricultural school complicated everything and make it harder for us to solve problems. I think I've improved my vocabulary, I feel more at ease and practical when it comes time to solve problems - she says.*

Ivome came on the scene when people were cleaning up and fencing the plot of land for the vegetable garden. The first step was to correct the depleted soil with lime and to plan ways of preventing soil erosion, since the land has a sharp slope.

This was where the mix of learning came in. Traditional small farmers are used to digging vegetable beds along the grain of the slope, which tends to increase soil erosion. In agricultural school students learn how to build terraces, which requires more technique and are more costly. The solution was a compromise: a kind of vegetable bed that followed the grain of the slope but was blocked by sideways trenches that held back the water and served to irrigated the vegetable beds.

A number of other learning experiences came out of this process. People learn that they are supposed to clear all the "weeds" off the land. But in just one conversation they re-learned that some of those wild plants had more vitamins than many conventional vegetables. From there on, they began referring to many other plants that their mothers and grandmothers were familiar with and that had a number of uses both in food and home remedies.

When we asked why they did not use these plants in their meals, they answered that their children refused to eat vegetables of any kind. All of the kids wanted to eat were the colorful products advertised on TV.

Therefore, the vegetable garden project is planning training courses of to take full advantages of foodstuffs through cooking techniques to make these attractive options as meals. This has been on recurrent theme when it comes time to convince people to change their eating habits: that it is not enough for the food to be nutritional, it has to taste good and have visual appeal.

## VII. So Just What Are We Leaning?

Due the magnitude of Citizen's Action and the broad range of activities carrieda out by Rede Mulher, learning has occurred at various different levels. One might say that all of the social actors involved in this Campaign are learning from each other through both synergism and conflicting interests. And the social actors are many: nongovernmental organizations, organized groups, the population benefitting from the Campaign, public powers at various levels, businesses, and individuals.

**From the point of view of government:**

There has been an obvious fragmentation and inertia in relation to solving basic problems for supporting people's survival.

Although some NGOs insist on placing these problems primarily in the hands of the state, there is a strong tendency to mobilize society in the most descentralized way possible to solve local problems. Furthermore, there is a trend to pressure to trigger government agencies into action (whenever their role is indispensable) and to keep a community watch over this action.

**With regard to citizens:**

Citizen's Action, from the local up to the national level, has been a major exercise in partiticipatory action. Citizens' Action has made it possible to make decisions and assume responsability for them.

Citizens' Action show that in order to solve the hunger problem we must work to counteract the inequalities between whites and non-whites, women and men, young people and old.

**From the point of view of gender:**

Nongovernmental organizations generally do not clearly see that the unequal relations between men and women is at the root of this system for expoiting nature, the prevailing development model, and cultural distortions. It is necessary to do "gender literacy training" in these organizations.

We see that there is still considerable resistance within the NGOs to visualize how they themselves may still be reinforcing distortions between production an reproduction. Having the support of women volunteers in the Campaign, the NGOs continue to treat them as if they were passive beings to be trained and oriented but who are not capable of making decisions or worthy of being paid for their labor. This deepens inequalities, since it burdens women with a triple workday.

Women are overburdened with the need to work, keep house, care for the children, and on top of it all, to act in the community. Therefore, projects and proposals should consider them at all different levels, create mechanisms to introduce new concepts of parity between men and women in the sphere of reproduction of life.

This emphasis on women is not favoritism. It is merely a matter of correcting historical distortions which place men and women in imbalance, with the scale weighing on the side of women when duties are at stake and on the side of men when we are talking about rights.

There are still few women in the decision making sphere of the Citizen's Action. We demand that there should not be more than 60% of men or fewer than 40% of women at the various levels of participation and decision-making in this Campaign.

**From the environmental perspective:**

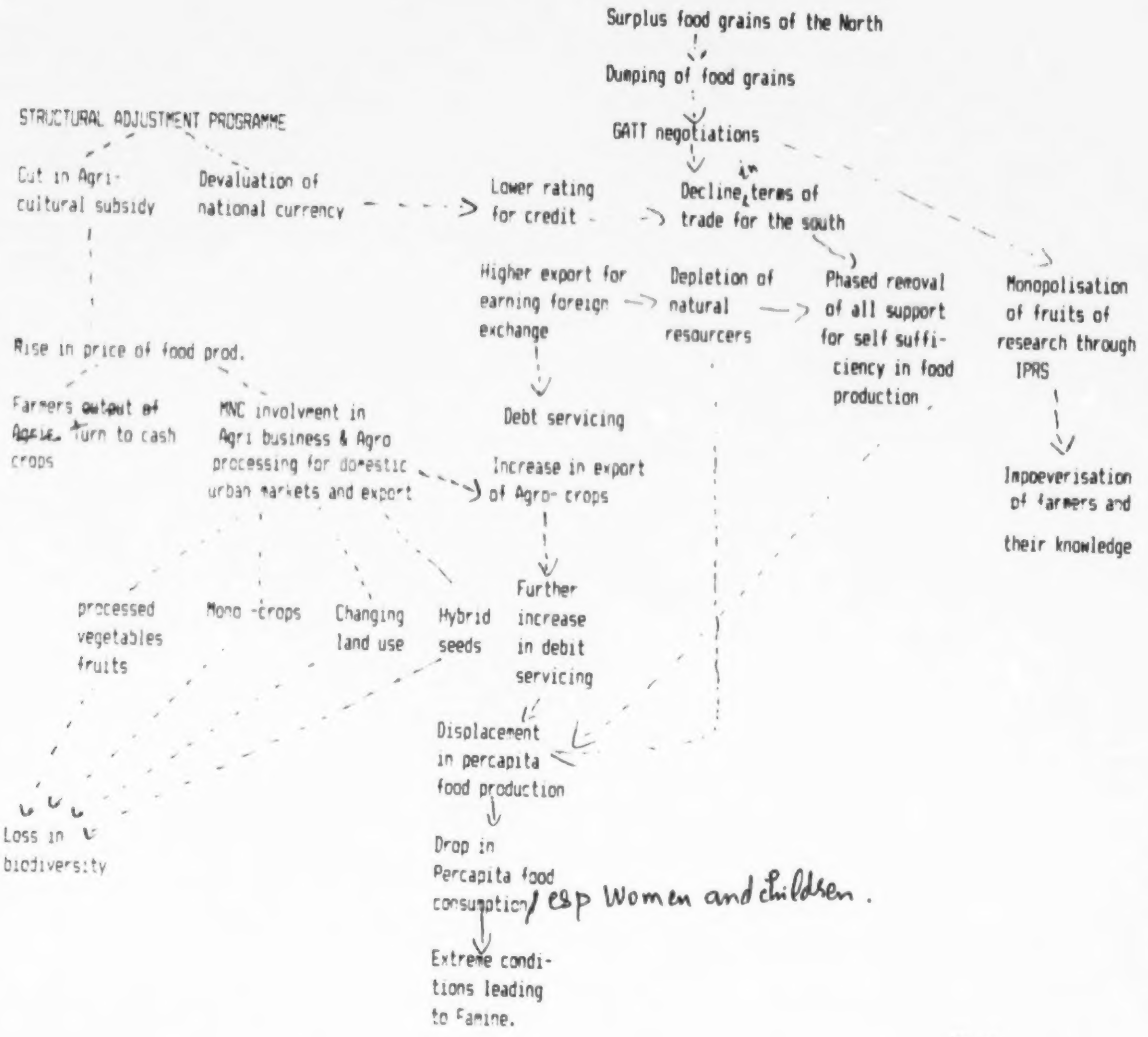
It is only now that urban struggles for quality of life are taking on an environmental connotation. Until recently, a compartimentalized view separating urban space from the ecosystem was responsible for the centralization or water and electric power supplies, which heavily damages the environment.

There is a lack of viable solutions for urban communities that can be implemented by public powers. In general, there is little information and limited access to new technologies. Worse yet, there is also a lack of political will to develop new technologies with low impact.

We need to undertake a veritable "ecological literacy training" for all the social actors involved in the struggle against hunger. This could ensure changes for them to see food safety in its environmental dimensions: the search for food quality, the use of local plants to combat hunger, descentralization of programs, and the search for self-sufficiency in the sense of producing for consumption and not just for export.

As a Brazilian rock group known as the Titans says in one of its lyrics, "We don't just want to eat". In order to take proper advantage of food, people need health care, housing, basic sanitation, and education. It is necessary to share the joy of living without domination among human beings or between humankind and nature.

'Control' - Prescription for third world hunger:


Surplus food grains of the North
Dumping of food grains
GATT negotiations
STRUCTURAL ADJUSTMENT PROGRAMME
Cut in Agricultural subsidy
Devaluation of national currency
Lower rating for credit
Decline in terms of trade for the south
Higher export for earning foreign exchange
Depletion of natural resourcers
Phased removal of all support for self sufficiency in food production
Monopolisation of fruits of research through IPRS
Rise in price of food prod.
Farmers ~~output of Agric.~~ turn to cash crops
MNC involvment in Agri business & Agro processing for domestic urban markets and export
Debt servicing
Increase in export of Agro- crops
Impoeverisation of farmers and their knowledge
processed vegetables fruits
Mono -crops
Changing land use
Hybrid seeds
Further increase in debit servicing
Displacement in percapita food production
Loss in biodiversity
Drop in Percapita food consumption/ esp Women and Children.
Extreme conditions leading to Famine.

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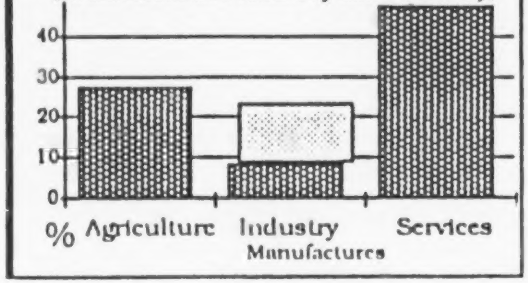
# Indicators

**Demography:** 223 inhab/sq.km. **Urban Population:** 24%.
**Labor Force:** 293193000 (1985), of which 69% in agriculture.
**Average annual rate of population growth:** 2.3% (1973–84).
Estimated population in year 2000: 994 millions.

**Economy**
**Per capita GNP:** $270 in 1985.
**Average annual growth rate:** 1.7% (1965–85).
**Currency:** rupee; flexibly floating; 13.10 = $1 (Oct.1987).
**Average annual inflation rate:** 7.8% (1980–85).
**Consumer price index:** 100 in 1980, 191 in Sep.1987.

## Economic Structure

(Gross Domestic Product by kind of activity)



**Average wage:** $64.61 per month.

**Imports:** $14870 million (1986).
**Exports:** $9207 million (1986).
**Major export products:** precious and semi-precious stones, 12%; crude petroleum, 11%; clothing, 8%; iron ore, 5%; fresh fish, 4%.
**Major markets:** US, 12%; Japan, 10%; United Kingdom, 9%; Soviet Union, 9%; FRG, 5%.

**External debt:** $35460 million in 1985. Debt service consumed 12.7% of exports in 1985.
**Direct foreign investment:** $70.0 million in 1985
**Transnational capital flow:** $688.6 million in 1985; from France, 57%; US, 16%; Belgium, 9%; Switzerland, 9% Capital outflow: $72.6 million in 1985; to United Kingdom, 99%.
**Foreign assistance:** $2070.0 million in 1985. Major sources: 38% OECD countries and agencies; 6% CMEA; 3% OPEC; 869.1% International Development Association.

**Energy:** 159.80 million tons. of Coal Equivalent (CE) produced in 1983. Major source: coal and lignite. Consumption: 233 kilograms of CE per capita yearly, of which 12.6% imported.

**Health:** There is one physician for every 2620 inhabitants, and one hospital bed for every 1313
**Life expectancy:** 54.1 years for men and 53.3 years for women.
**Infant mortality:** 9.0%.
**Average daily calory consumption:** 2115 per capita i.e. 96% of required intake (1983).
55% of the population has acces to drinking water.

**Education:** Illiteracy rate: 58.2%; 45.2% men and 74.3% women .
**School enrollment:** 90% in primary, 34% in secondary. There are 776 university students for every 100,000 inhabitants.
There are 1389356 primary school teachers, one for every 43 students .
**Educational expenditure** is 9.6% of the budget (1982).

**Communications:**
**Daily newspaper circulation:** 20 per 1,000 inhab
There are 55 radio receivers and 4 TV sets per 1,000 inhabitants.
190 films were imported in 1981, from US 12%, Soviet Union 6%, France 4%. 741 films were produced (1983).

**Armed Forces:** 1260000 members in 1986 (army 1100000, navy 47000, air force 113000).
**Paramilitary:** 255000 (National Security Force and Border Security Force).
**Military expenditure:** $6907 million in 1984, 19% of the budget.

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# Income Distribution

Share of family income going to the **POOREST 20%**

| Brazil | South Africa | USA |
|---|---|---|
| 2.40% | 2.46% | 4.70% |

Share of family income going to the **RICHEST 20%**

| Brazil | South Africa | USA |
|---|---|---|
| 62.60% | 59.36% | 41.90% |

# Data on Brazil

Population: 146.5 million

Area: 8.5 Km (million km²)

Capital: Brasília

Urban population: 69%

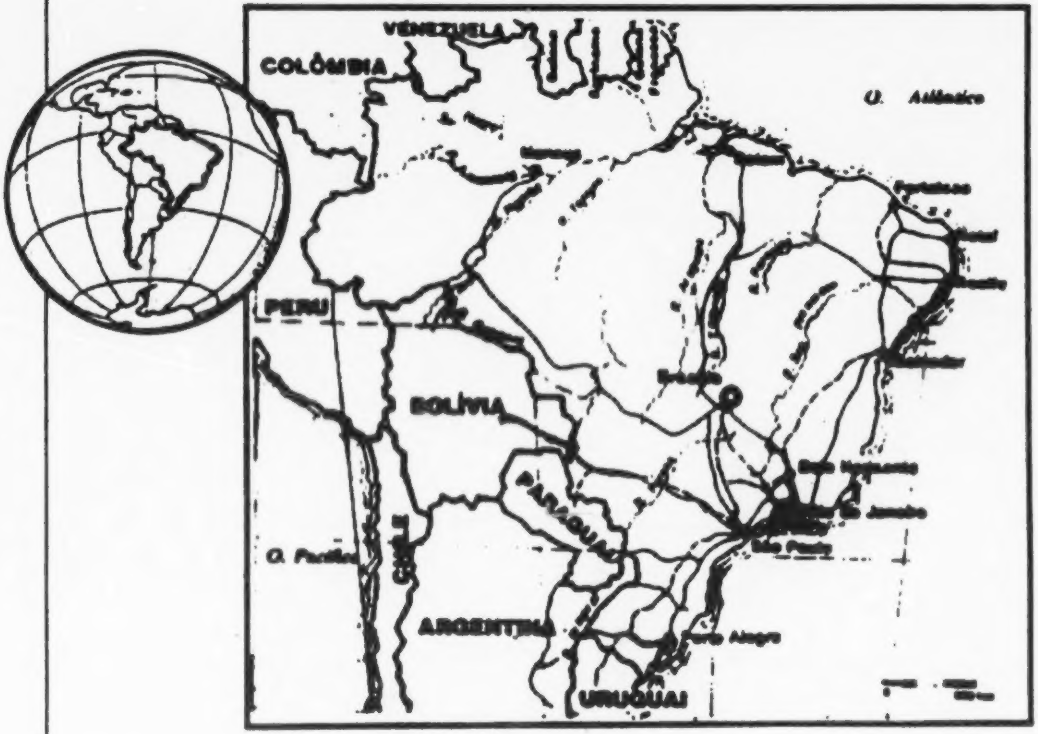
Land distribution:

little

70% of the farmers own 8.5% of the land

10% of the farmers own 75% of the land

big landowners


VENEZUELA
COLÔMBIA
O. Atlântico
PERU
BOLÍVIA
PARAGUAI
CHILE
O. Pacífico
ARGENTINA
Porto Alegre
São Paulo
Rio de Janeiro
Belo Horizonte
Brasília
URUGUAI

SAO PAULO 14.000.000 habitants
(city)

NT 60%

## Data on waste

Some **13.8 million** tons of food (20% of agricultural production) are lost annualy during harvest or storage. This is equivalent of **234.7 million** basic breadbaskets, enough to feed all of the hungry Brazilian families for two years. The cost of this bad joke is **5.4 billion** dolars a year.

In government warehouses there are a total of three thousand tons of rotten food from previous harvests and over 30 thousand tons that are on the verge of rotting. 15 thousand tons of this food would be sufficient to feed 400 thousand children a year.

# Transformative Learning in Marginal Areas of Indigenous Migrants in an Amazon City

By Omar Ovalles

## 1. Introduction

One of the areas most ignored by research in the world is that of the indigenous communities. Within their extensive spectre of societies, only those isolated communities with attractive socio-cultural particularities, or with an evident interest for anthropology, have been objects of attention.

In addition, those indigenous communities which migrated to the cities, and who have found themselves caught-up in the difficult process of trans-culturalization, have not received sufficient attention. Some anthropologists feel that these communities have lost their indigenous character and therefore, are no longer "showy" or interesting.

In reference to "transformative learning", these communities allow us to explore processes of environmental education from already borderline situations, and the symbolic confrontation of a culture within the dominant culture. In this sense, environmental action education has a re-affirming role to play in the cultural synthesis taking place in the Amazon.

For several decades, in Puerto Ayacucho (40,000 inhabitants), capital of the state of Amazonas in Venezuela, enormous numbers of migrants have been arriving from an extensive and isolated area. These migrations have created an extensive development of marginal lands around the urban core of the city, in which, curiously, people who represent multiple ethnic groups coexist, without major conflicts. In addition, they are made up of descendants from neighbouring countries, like Colombia and Brazil, to name a few. Together, they create a true intercultural mosaic, while losing their individual cultural identities. Areas such as the one in which these people live, are subject to state intervention for the provision of homes and other public services; they have weak community ties, and the even partial evocation of collective memory of the experience they lived in their places of origin is diminished.

In the Amazon State there are four different occupations which have determined different environmental patterns, and which define the contradictions in the margins of the urban setting in which we work.

The first mode of occupation refers to the extractive industry, gold, diamonds and cocoa. These industries are united and have strong economic repercussions. The second is the State Public Waste Works. These infrastructures are unable to support the large portion of the urban population who have serious socio-economic deficiencies and who are unable to pay for the services. The third mode of occupation is typical of the indigenous communities which are more or less isolated from their traditional cultures. These people maintain a slash and burn system of survival. In some cases, the presence of Catholic and Evangelical missionaries bring these communities together. The fourth mode of occupation refers to the special low regimen areas, in particular, the national parks, natural spaces, and biosphere reserves, in which both the State and NGO's carry out research, and work to protect biodiversity, forestry, and mineral resources.

Fascinating examples of practical experiences from the jungle or certain agro-silvapastoral activities which rely on the traditional agricultural principles and ecological interactions coming together with some modern technologies, are emerging out of this. Projects are involving migrants who would otherwise move to the marginal areas of the city of Puerto Ayacucho, and who bring with them their own histories, values, and principles; at times, this creates conflict. The human ecology of the communities are the object in this project.

## 2. Environmental Action Education for Transformative Learning

To begin, it is important to define the significance and clarify the terms behind educational methodologies which are being used in the urban Amazon.

We understand environmental action education to be a social process through which the values, principles, knowledge, etc. learned from the practices of past generations and found in the personal and collective consciousness of people, are critical. These values, principles, and knowledge come from the experience and relationships between societies and their natural environments throughout history. Due to the socialization process, this knowledge has been lost, and no longer transmitted from generation to generation, until now.

Environmental Action Education also pertains to necessary practices which will bring about the substantial modification of the living conditions of the people who realize that fundamental human rights must be achieved in order to create a liveable environment.

Environmental Action Education seeks to rediscover unconscious wisdom in order to foster actions which work to improve the living conditions of the communities through their own powers and work.

Transformative learning comes together with environmental action education in both its ends and its means. Although the experience of learning is objectively individual, it happens within an educative context which is fundamentally social and shared. The transformation can be understood in two ways. The first is a substantial modification of values, attitudes, and behaviours, and the accumulation of information which fosters concrete individual actions to better or substantially change the natural environment. Clearly, this process of change comes not only from new ideas and information, but also from revaluing contributions from our ancestors.

The second meaning of the term transformative has to do with raising the political consciousness of communities in order to unleash powers to change their living conditions and to help people realize that they have the power to make change.

2

We believe that these two meanings are not contradictory and that they occur simultaneously and include inner strength. For this reason both housing conditions, and consciousness, change in one single process, when the learning begins outside the sphere of the mundane and the superficial.

This is the basis of this process of Environmental Action Education which begins in a marginal urban space, with intercultural indigenous migrants, who have been subject to an intense process of trans-culturalization by the dominant society.

It is necessary to emphasize that the geographical location in which the process occurs is very narrow; it is the ancient bed of the Orinoco river, which possesses a porous ground that cannot provide a stable foundation for buildings, or the construction of systems to supply drinkable water. In addition, the solid black rocks, within the poorly constructed and ventilated housing of the communities, retain excessive heat. This type of land also prevents the regeneration of natural vegetation or crops. These circumstances, along with insufficient resources and restricted access to other more fertile lands, present a true challenge to the communities located there.

For several years, the Amazonas Project of the Central University of Venezuela, has begun working around the Amazonas state.

## 3. The Amazonas Project and the University Extension in Amazonas

A particular social contingent that involves itself in this complex situation of the Venezuelan Amazon, and especially its urban environments, is the Amazonas Project. For several years, undergraduate students and professors have come to this State with the objective of collaborating in research in the fields of health, architecture, engineering, agronomy, veterinary, education, humanities, etc. These students and teachers, coming from urban areas like Caracas, are familiar with the Amazon problem and remain in the Amazon anywhere from one week to three months, and help develop activities and actions which will better the communities.

From the position of Environmental Action Education this foreign human contingent signifies a valuable resource. However, we must be conscience of the inevitable socio-cultural repercussions which can take place between the two groups. That is why the research has a dual purpose: To define the range of Environmental Action Education for transformative learning, as well as, to bring together university students in the Amazon.

## 4. Experience of the Application of the Methodology

In order to activate a process of reencounter with the environmental wisdom existing at the level of the collective unconscious, and from there to be able to initiate a process of transformative learning, it is necessary to effectuate a diagnosis of the principle sociological characteristics of the

3

area, and a recollection of its physical, geographical and ecological characteristics.

This enquiry should be accompanied by an special investigation of the cultural element which permits activation of the full process of reencounter with the lost memory. Annex 1 contains the instrument utilized which was supplied to the community by students in January of 1993, in a representative showing.

Of the diagnoses which were done, they chose a theme (Freire, P. Education as a Liberating Practice), or element to activate the process of transformative learning. The element which they chose was the Amazon palm.

The Amazon palm is key because it is part of almost all indigenous mythologies; therefore, it is deep-rooted enough in the people's unconscious to be of likely connection with a "thematic universe" (Freire P. opcit). Also, it holds an indirect reference with the improvement of habitat: Not only is it a resource for reforestation and protection of biodiversity, but its stems, fruits, inflorescence, leaves, roots, resins, etc. also have multiple uses for nutrition, health, construction and crafts.

In reference to this last use, the connection with the symbolic aspect is evident. It gives more power to our intention of initiating a process of transformative learning that reaffirms the conscience of the communities.

After concluding this stage, a process of collecting information about the generator theme began immediately. References, dates, and experiences, which would help to initiate a process of examining the value of the palm in daily life, were gathered. See annex 3.

This process was done with instruments like flyers, murals, talks, videos, game kits etc, and it elicited more integrated and holistic themes.

It was also done by means of the discussion in the heart of the community about public service projects, and it generated jobs. See annex 3.

The learning becomes transformative in the moment that it starts to influence power, work, management, and culture relations; it is nothing better than a project of intervention, which stimulates reflection about these conditioners.

The students, starting from the pre-diagnosis, chose the projects of white and dirty waters, and employment, using the construction and the crafts as simulators of the reflection; they edited a series of self-instructional manuals that served to generate discussions with the representative organizations of the community.

In each of these meetings, they tried to make up networks of individuals or organizations, which would permit continuing the process, without the presence of the University. From the meetings, they extracted information about the limitations of the community to achieve the projects, and modifications to the projects themselves, and they included new proposals that would necessarily have to have implementing agents from the heart of the community. In order to make these projects real, it is necessary to influence the fundamental relationships which transformative learning wants to attack.

These teams would continue their work, going deeply into new facets of the project, actions and interpretations. These were discussed again and again, always with the aim of giving meaning to the process itself, and not only to its results.

## 5. Results of the Diagnosis

In the sector under study, today there are more than 5000 habitants, representatives of ethno-cities like the: curripacos, bar , yecuana, piaroa and guajibos, as well as, migrants from Columbia, Bolivar City, Caicara and San Fernando de Apure. Map No. 2 illustrates their origins.

The social level is low. There are extended families, low levels of schooling, high unemployment, and serious mortality problems because of a series of epidemics.

Table No. 1 illustrates the situation for some of these factors.

The degree of knowledge about the palms as resource and as cultural element is varied, and does not accord with its distribution and ecological dominance (see Square No. 2)

Square No. 3 illustrates the percentage of responses obtained, and what stands out in it is the active presence of the majority. Only the cumare, grape, yagua, mapora, palmita, and sarisare received a lesser number of responses.

The Amazon palm is therefore present in the memory of these urban populations even though they are not able to spread them about their houses for lack of space, and they appear as symbols in almost no other element of their daily lives.

When the presence of this element in their food is investigated, the percentages decline as is expressed by table No. 4. Of the edible species, only 6 are used, but with low frequencies.

It is necessary to make note of such, and Table no. 5 expresses that the nutritional deficits in these communities are elevated; as well, their patterns of consumption are highly distorted.

Finally, it is necessary to emphasize that in spite of not observing a greater number of constructive housing elements made with materials coming from these palms, an important percentage of the interviewed recognized their value. Table No. 6 illustrates the obtained results.

In the case of the crafts, the percentage is also very low, indicating the small disposition of using, or of at the least recognizing, the utility of this natural element.

In conclusion, we have a clear dissociation between the two levels of knowledge: they recognize the palms as such, but don't claim or use its properties.

The palms are an important part of ecosystems like the evergreen forests and swamps. Venezuela occupies the third place in the continent in terms of diversity of palms reaching 180 species of 33 different kinds of which 28 are located in Amazonas and the delta of the Orinoco with 74 species, as it appears in the following table:

The palms most common are those of the bactris, euterpe and astrocaryum type. Next, will appear briefly the most common uses of each one, demonstrating the immense possibilities of this unproductive resource:

Corozo: To cure the flu, health of the hair. The seeds are edible and the oil serves to cook.

Cumare: The fruit are edible and the shells of its fruit are used for crafts. The leaves are used to weave.

Coquito: They have a high vermifuge power and crafts can be made of its fruit. The seeds are edible.

Cucurito: Its leaves are used to make roofs and the shoots are edible.

Anillo: It is used for crafts.

Corocillo: The fruit can be used as food and the leaves can be used to make roofs and crafts.

Pijiguao: The fruit are used to make drinks, flours and oil and can be eaten equally as the shoots. It is a key plant in the rituals and customs of makiritares bundles, piaroas yecuanas and yanomamis. The leaves and stems are also used as wood and other construction materials.

Grape: The fruit is edible and have vermifuge power.

Cubarro: It is a very useful plant for basket making and to make roofs. The fruit is edible.

Black cane: The fruit is edible

Roof palm: It is a fountain of construction materials for house, roofs, farmyards. The fruit are edible and the latex has expectorant power, diuretic and blood purifier.

# APRENDIZAJE TRANSFORMATIVO EN AREAS MARGINALES DE MIGRANTES INDIGENAS EN UNA CIUDAD AMAZONICA

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## Introducción

Una de las areas de investigación y de trabajo mas desasistidas en el mundo son las comunidades indígenas. Dentro de este amplio espectro de sociedades sólo han sido objeto de atención aquellas comunidades aisladas, con atrayentes particularidades socioculturales o con un interes manifiesto por parte de la antropología.

Sin embargo, aquellas comunidades indígenas que han migrado a las ciudades y que de hecho han avanzado en un grave proceso de transculturización, no son objeto de la debida atención.Algunos antropólogos consideran que estas comunidades han perdido su condición indígena y por lo tanto no son "llamativas" o interesantes.

Pero, para el tema que nos interesa: el "aprendizaje transformativo" son estas comunidades las que permiten explorar los alcances de los procesos de educación ambiental ya que poseen un inequivoca situación de border line, ajustadas un estrecho margen que significa la confrontación fáctica y simbólica de su cultura con la cultura dominante.

En este sentido, la educ - acción ambiental pasa a cumplir un rol reafirmador de su condición, ademas de aportar salidas al necesario proceso de síntesis cultural, que de todos modos e inevitablemte se esta dando en el Amazonas.

En Puerto Ayacucho( 40.000 hab) capital de estado Amazonas de Venezuela han estado llegando desde hace varias décadas enormes contingentes de migrantes provenientes de toda una extensa periferia extensa e incomunicada. Estas migraciones han generado el desarrollo de extensas áreas marginales alrededor del casco urbano de la ciudad en la cual curiosamente conviven, casi sin conflictos, representanes de múltiples étnias. Entre ellos habitan tambien descendientes de criollos o nacionales de otros paises vecinos, como Colombia y Brasil en menor medida, conformando asi un verdadero mosaico intercultural en proceso de perdida constante de sus identidades.

Unas áreas como estas ,que a la vez son fruto de la acción del Estado al construirles viviendas y otros servicios públicos,poseen débiles lazos comunitarios y generan una serie de desconocidos procesos de relacionamiento, producto a su vez, de la evocación parcial
de su memoria colectiva y la experiencia vivida en sus lugares de origen.

En el estado Amazonas existen cuatro modelos de ocupación que han determinados patrones ambientales diferentes de paisaje y que luego, al expulsar sus migrantes, permiten explicar el comportamiento contradictorio de las áreas marginales urbanas en donde estamos trabajando.

El primer modelo de ocupación se refiere a la industria extractiva,basicamente de oro, diamante y coca con economías de enclave y fuerte repercusión económica. El segundo modelo tiene su base en la realización del Gasto Público Estadal por intermedio de las enormes contrataciones de obras por parte de la Gobernación del Estado y otros entes del públicos. Este modelo genera las características de un espacio urbano sui generis,dotado de algunas infraestructuras, pero habitado por un contingente humano "aluvional" con graves carencias socioeconómicas.

El tercer modelo de ocupación es típico de las comunidades indígenas mas o menos aisladas con débiles procesos de transculturación o aculturación y por lo tanto mantiene los sistemas de roza y quema así como un patrón de poblamiento disperso. En algunos casos la presencia misionera católica y evangélica concentra parte de estas comunidades.El cuarto modelo que se esta implantando se refiere a las áreas bajo régimen especial y en especial bajo de estatus de parque nacional,monumentos naturales y reservas de biósfera, en las cuales el Estado y las ONGs adelantan investigaciones y acciones conducentes a la protección de recursos genéticos, forestales y mineros.

Finalmente es necesario destacar como a partir de un interesante modelo híbrido se han venido sucediendo experiencias de prácticas extrativistas de la selva o de cierta actividad agrosilvopastoril en las cuales se conjugan viejos principios agrónomicos y constataciones ecológicas con algunas tecnologías modernas.

Sin embargo lo que nos interesa destacar es que desde todos estos lugares estan saliendo migrantes que luego pueblan las areas marginales de la ciudad de Puerto Ayacucho, trayendo consigo su historia de vida y sus escalas de valores y principios que entran en confrontación.

Este es el marco de ecología humana de las comunidades objeto de antención en este trabajo.

## 2 EDUC-ACCION AMBIENTAL PARA EL APRENDIZAJE TRANSFORMATIVO

Para iniciar este subcapítulo es necesario definir previamente el significado de los términos empleados de manera de explicitar el proceso de diseño de la metodología de intervención en el sector marginal urbano en estudio.

Entendemos la educ- acción ambiental como un proceso social mediante el cual se van reconociendo los valores,principios ,informaciones,etc aprendidos por la práctica de generaciones pasadas y que permanencen en el inconsciente personal y colectivo. Estos valores, principios e informaciones se remiten a la experiencia de las relaciones de las sociedades con sus ambientes en un largo devenir histórico y que por mecanismos genéticos y sociales se han ido acumulando o perdiendo de generación en generación hasta llegar a nuestros días.

La Educ- Acción Ambiental tambien remite a la necesaria práctica conducente a la modificación sustancial de las condiciones del habitat de la gente ya que reconoce una serie de derechos fundamentales del hombre que deben cumplirse para catalogar a un ambiente como habitable.

La Educc- Acción Ambiental por lo tanto, intentará redescubrir esta sabiduría inconsciente para activar acciones para mejorar el habitat de las comunidades en la dirección indicada por ellos mismo soberanamente.

El aprendizaje para la transformación se consustancia con la educ-acción ambiental por lo fines y por los métodos. Sin bien la experiencia de aprendizaje es objetivamente individual, este se dá en un contexto educativo que es fundamentalmente social y compartido. Ahora bien, la transformación que remite el concepto puede entenderse de dos maneras: Como una modificación sustancial de las escalas de valores, estructuras de conceptos y cúmulos de informaciones que luego dan soporte a acciones concretas del individuo en pro de la mejora o el cambio sustancial del habitat que ocupa. Evidentemente este proceso de cambio no sólo se realiza por aportes nuevos sino revalorizando aportes hechos en el pasado por nuestros antecesores.

La segunda acepción del término transformativo tiene que ver con la elevación de la conciencia política de las comunidades para desencadenar procesos de cambio en las condiciones del habitat que luego condicionarán a los individuos para que realicen su cambio personal por vía de la inducción.

Creemos que ambas acepciones del términos no son contradictorias y que ambos procesos se dán simultáneamente e incluso autorreforzandose. Es por ello que tanto el habitat ,como la conciencia se van cambiando en un solo proceso cuando las acciones emprendidas se asumen con una intencionalidad tál, que permita que trasciendan mas allá de la esfera de los cotidiano y lo superficial.

Esta será la base del proceso de Educ- Acción Ambiental emprendido en un espacio marginal urbano de síntesis intercultural de los migrantes indígenas, todos sometidos a un intenso proceso de transculturización por parte de la sociedad dominate.

Hay que destacar que el substrato físico en el cuál se dá este proceso es altamente restrictivo ya que se trata de antiguo lecho del río Orinoco, el cual posee un suelo lítico, imposible de ser oradado y por lo tanto con graves deficiencias para la fundaciones de las viviendas y la contrucción de sistemas de suministro de agua potable y de recolección de aguas servidas bajo los patrones convencionales. Del mismo modo, por ser rocas muy sólidas y de color negro poseen un mal comportamniento térmico adicionando calor excesivo a las precarias y mal ventiladas viviendas de zinc de las comunidades.

Sin embargo, este sector a estado sometodo a un intenso proceso de ocupación ya sea por viviendas en serie construidas por la Dirección de Malariología del Ministerio de Sanidad y Asistencia Social y otros entes públicos o por la generación expontánea de viviendas precarias de mala calidad.

Este substrato imposibilita ademas en muchos sectores la generación de la vegetación natural o los cultivos.

Todo esto siginifica un verdadero reto para las comunidades que se han ubicado allí por la insuficiencias de recursos y por las dificultades de acceso a otros terrenos con condiciones mejores.

El mapa Nº 1 ilustra la ubicación del área de trabajo,la cual además posee una característica adicional ya que en ella se ubica la sede del Proyecto Amazonas de la Universidad Central de Venezuela el cual organiza un importante proceso de extensión universitaria desde hace varios años en todo el estado Amazonas.

## 3 EL PROYECTO AMAZONAS Y LA EXTENSION UNIVERSITARIA EN AMAZONAS

Un contingente social adicional que se le agrega a la ya compleja situación del Amazonas venezolano y en especial de sus ambientes urbanos es el Proyecto Amazonas. Desde hace varios años han venido llegando al estado estudiantes de pregrado y

Esto se hará mediante la discusión en el seno de la comunidad de proyectos de servicios públicos y de generación de empleo que partiendo del issue original complejizan la discusión.Ver anexo 3

El aprendizaje se vuelve transformativo en el momento que comienza a incidir en las relaciones de poder, trabajo, género y cultura y nada mejor que un proyecto de intervención mas o menos complejo que estimule la reflexión sobre estas condicionantes.

Los estudiantes a partir del prediagnóstico eligieron los proyectos de aguas blancas,servidas y empleo a traves de la contrucción y el artesanado como estimuladores de la reflexión y editaron una serie de manuales auto instruccionales que sirvieron para generar discusiones con las organizaciones representativas de la comunidad.

En cado una de estas reuniones se trató de constituir redes de individuos y o organizaciones que permitien continuar el proceso ya sin la presencia de la Universidad. De las reuniones se estrajeron informaciones sobre las limitaciones de la comunidad para lograr los proyectos,modificaciones mismas a los proyectos e incluso nuevas propuestas que necesariamente tendrían que tener agentes implementadores del seno de la comunidad.Para hacer realidad estos proyectos se hace necesario incidir en las relaciones fundamentales aquellas que el asprendizaje transformativo quiere atacar

Estos equipos continuarían su trabajo profundizando nuevas facetas de los proyectos,acciones e interpretaciones de lo discutido una y otra vez siempre apuntado a darle sentido al proceso en sí y no sólo a sus resultados profesores con el objeto de colaborar con la investigación ,docencia y extensión en los campos de la salud, arquitectura, ingeniería, agronomía, veterinaria,educación, humanidades etc. Estos estudiantes y docentes provienen de ámbitos urbanos como Caracas, han sido sensibilizados por la problemática amazónica,tiene un tiempo de estadía de una semana a tres meses en Amazonas y estan siempre dispuestos a activar acciones en pro de mejoras de las comunidades.

Como puede observarse para un programa de Educc-Acción Ambiental este contingente humano foráneo significa por un lado un valiosos recursos, pero por otro lado, hay que estar concientes de las inevitables repercusiones socio culturales de contacto de ambos grupos.

Por esta razón esta investigación tiene un doble sentido ; por un lado intenta determinar los alcances de un Educ- Acción Ambiental para el aprendizaje transformativo y por otro el significado de este proceso para un conjunto de estudiantes universitarios en el amazonas.

## 4 EXPERIENCIA DE APLICACION DE LA METODOLOGIA EMPLEADA

Para activar un proceso de reencuentro con la sabiduría ambiental existente a nivel del preconciente colectivo y de allí poder iniciar un proceso de aprendizaje transformativo es necesario efectuar primero un prediagnóstico de las principales características sociológicas del área, así como un reconocimiento del entorno físico geográfico y ecológico en la cual se encuentra.

Este sondéo deberia estar acompañado de cierta indagación de algun elemento cultural que permita activar todo el procese de reencuentro con la memoria perdida. El anexo 1 contiene el instrumento utilizado el cual fue suministrado a la comunidad por estudiantes en enero de 1993 en una muestra representativa.

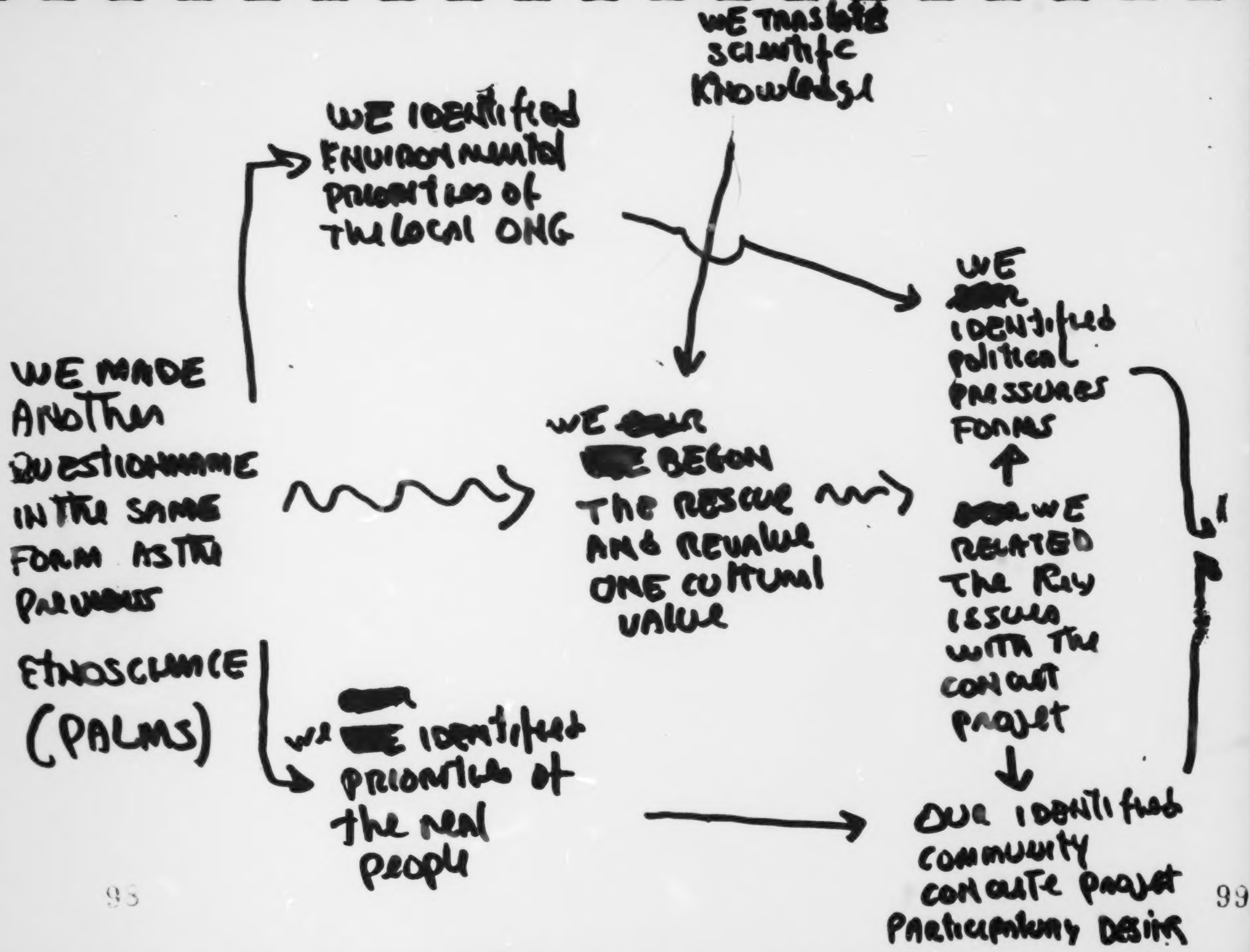
Del prediagnóstico hecho se seleccionó una temática generadora (Freire,P La Educación como práctica de libertad) o elemento que permite servir de issue para activar el proceso de aprendizaje transformativo. El elemento seleccionado fue la palma amazónica.

La palma amazónica tiene la ventaja de ser una temática que es parte de casi todas las mitologías indígenas y por lo tanto esta bastante arraigada en la inconciencia de las personas por lo tanto es de facil relacionamiento con un Universo temático (Freire P op cit).Pero por otro lado, tiene una referencia directa con la mejoría de habitat no sólo como recurso para la reforestación y protección a la biodiversidad, sino que sus tallos, frutos, inflorecencias, hojas,raices ,resinas etc tiene múltiples aplicaciones para la alimentación ,salud,construcción y artesanado.

En este último uso la conexión con el aspecto simbólico es evidente y potencia mas nuestra intención de iniciar un proceso de aprendizaje transformativo que necesariamente tiene que conducir a las reafirmaciones de la conciencia de las comunidades.

Despues de concluirse esta etapa seguidamente comenzó un proceso de información sobre el tema generador, tratando aportar referencias, datos,experiencias que permitieran iniciar un proceso de reconocimiento del valor de la palma para la vida codidiana.Ver anexo 2

A partir de esta sensibilizacion, la cual se hizo con diversos instrumentos como volantes,murales charlas,videos,kits de juegos etc se procedió a trascender el issue hacia temáticas mas integradoras y holísticas.



WE MADE
ANOTHER
QUESTIONNAIRE
IN THE SAME
FORM AS THE
PREVIOUS

ETNOSCIENCE
(PALMS)

WE IDENTIFIED
ENVIRONMENTAL
PRIORITIES OF
THE LOCAL ONG

WE TRANSLATE
SCIENTIFIC
KNOWLEDGE

WE
[redacted]
IDENTIFIED
POLITICAL
PRESSURES
FORMS

WE [redacted]
[redacted] BEGAN
THE RESCUE
AND REVALUE
ONE CULTURAL
VALUE

[redacted]
WE [redacted] IDENTIFIED
PRIORITIES OF
THE REAL
PEOPLE

[redacted] WE
RELATED
THE KEY
ISSUES
WITH THE
CONCRET
PROJET

OUR IDENTIFIED
COMMUNITY
CONCRETE PROJET
PARTICIPATORY DESIGN

THE
PROGRAM
BEGAN ONLY
WITH MEDICAL
AIDS,
NUTRITION
LITERACY
ORTHODONTOLOGY
FOR MANY
COMMUNITIES
IN THE WHOLE
STATE

→

WE
DECIDED
TO FOLLOW
AN INTERDISCIPLINARY
APPROACH IN
ONE URBAN
AMAZONAS
AREA

→

WE MADE
A VERY
DIFFERENT
SURVEY
THE RESULT
OF EACH
QUESTIONNAIRE
MUST BE TOLD
TO OTHER
PEOPLE

→

WE
IDENTIFY

↑

INTER
CULTURAL
THEMATIC
UNIVERSE

↓

INTERCULTURAL
KEY
ISSUES
(PALMS)

You are Project Amazonas students

You are studing architecture and environmental education ~~by~~ through transformative learning

You ~~had~~ have made a survey in order to identify socio-economic characterists

Now, you try to return local knowledge about medical, nutrition and architecture uses to the people

You are a leader~~ship~~ of Guajibo indegenous community

The Goajibo don't ~~believe~~ ~~promess~~ believe your promises and want to go to the national capital

The Goajibo ~~has~~ have many problems like disseases, iliteracy, umployment, ~~desnutrition~~ malnutrition

the cultural values ~~is~~ are lost at a rate of 50% per cent

⊖ allows k

- YOU ARE AMAZONAS PROJECT COORDINATOR
- THE PROJECT NEEDS IMMEDIATE RESULTS organizing results a written [illegible]
- THE FUNDRAISING ~~IS~~ is NOW VERY DIFFICULT - people are poor - are not interested in popular knowledge - transformative - prefer white's [illegible] knowledge
- THE LOCAL GOVERNMENT ~~[illegible]~~ ~~[illegible]~~ INVITES YOU TO PARTICIPATE ~~[illegible]~~ in SOCIAL and PROGRAMS

AND

- YOU MUST GARANTEE DEMOCRATIC DEBATES AT THE UNIVERSITY - get people to come to the university - create a space [illegible]

YOU ARE A local governmental ~~GOBERNAMENTAL~~ ~~LOCAL~~ representative ~~REPRESENTANT~~

THE government ~~GOBIERNO~~ has ~~HAVE~~ MANY SOCIAL PROGRAMS AIDS IN THESE ~~ARE~~ LIKE MILK PROGRAMS for children, Food PROGRAMS for FAMILLIES, ~~[illegible]~~

YOU DON'T LIKE the UNIVERSITY ACTION in ~~[illegible]~~ THESE AREAS

- You are a leaders of Yeccana indigenous community
- The Yeccana want to work with Goverment social program
- The Yeccana have many problems like illiteracy, umployment, malnutrition
- The cultural values are lost at a rate of 20% percent

- You are school teacher ~~At~~ ~~For~~ in the Amazonas
- You work with small children with many problems like drugs, violence and malnutrition
- You have a low salary and many political ~~passions~~ pressures
- You would work at environmental education program if you ~~have~~ had the time
-

# TRANSFORMATIVE LEARNING THROUGH ENVIRONMENTAL ACTION

## PEOPLE'S RIGHTS, ENVIRONMENTAL EDUCATION AND ECOLOGICAL ACTION FOR SUSTAINABILITY: El Salvador

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El Salvador, C.A.
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This case study will start with a brief period of socio-political-historical-economic-cultural-ecological reflection of the Central America and Caribbean areas--the Chiapas, Mexico, uprising will be also included and its relation to NAFTA- the North American free Trade Agreement, as well as the Mexico/US border and the "maquiladoras" concern--making direct relations of these aspects to the concerns of the workshop, that is the ecological conditions and its correlation to food production-distribution-consumption and maintenance of biodiversity. We will look at people developed alternatives, such as cooperatives, networks, popular education. Then we will move to the more focused study of El Salvador, its environmental conditions and ecological action as it relates to the theme and quality of life.We understand that in general people always attempt to transform their environment in order to meet their various needs, and shape their reality to one that most meets their aspirations, we will look however at organized efforts to this effect.

A-El Salvador is the smallest country of Central America, and of the continent, with the exception of smaller islands in the Caribbean. Yet it is also the most densely populated country, and one which has just went through a devastating 12 year civil war--1980 to 1992-- which deteriorated the social fiber of the country, leaving thousands of orphans, widows, disapppeared, and more than 80,000 killed. The country was facing environmental degradation even before the war started, due to the practice of monocultures--Coffee, sugar, cotton--which depend on using large areas of land cleared for this purpose, intensive use of water, chemical fertilizers and pesticides. These have been the practice since the colonization process started in the early 1500's, and they continue in neocolonialist/modern times. This has been a five hundred year operation, which has aimed also to teach the people to be servants, to obey a master, and to relinquish their natural resources.

This situation is exacerbated by the fact, that the best arable and fertile land is controlled by two percent of the people, leaving the mountain sides and rabines for the production of beans, corn and vegetables which are the staple foods of the peoples of El Salvador. Thus at the beginning of the war we find a country which is drying up, and which is rapidly eroding. A countru unable to grow the basic products for feeding and nourishing its people. El Salvador has been for decades part of what the United Nations has called the world's Hunger Belt. At the root of the problem is not only the need for a drastic agrarian reform, but for mere access to land for growing food, as well as for the development of a soil classification system, which would determine soil types nationwide and how to best cultivate it, and what are the best crops for such soil and climate.

Today, these conditions have been agravated with the use of scorched earth and bombings in the country side, as counterinsurgency policies, and the displacement of tens of thousands of people. El Salvador after Haiti, is the most environmentally deteriorated country in the Americas. We face the threat of irreversible desertification for 1/4--1/3 of our territory by the end of this century unless immediate measures to reverse this process are put officially in action. We are the smallest nation of the area, yet we might become the biggest desert of the region.

Besides, the water, and water beds are drying and there are estimates that 70-90% is polluted. At least 4 out of 5 people in the urban areas do not have access to potable water, and in the country side, water ownership and its access is becoming the problem of the end of this century, and the cronic one for the next one. The unresolved issue of access to land, and that of water could be the germ of another war.

In general wars are a horrible happening for any people to go through, however, in our case, because of forced migrations, it left some areas of the country uninhabited for 5 and even 10 years. In some cases, neither the guerrilla nor the army accessed the area, which allowed for nature to replenish itself. Now, as the peace agreements have been signed, people are returning to their places of origin, and these areas are at risk. The government has not taken any measures to protect and safeguard any of these areas, nor any others in need of urgent care. At times, it has declared certain geographic or strategic areas, ecological zones, but this measure only serves to deny access to poor people, rather than to work to restore and protect them, while working with the people to meet their space, fuel, water and food needs.

The non governmental organizations-ngo's in the area, take this environmental concern into little account, as under the structural adjustment programs-sap's requiered of our governments by the International Monetatry Fund-IMF and the World Bank to participate effectively in the global economy, all public services have been cut or privatized, forcing ngo's to respond to meet people's basic needs. Most agricultural cooperatives are being forced to grow foreign vegetables and desert fruits for export in order to qualify for economic aid--private national or international investments-- this is another "must " of the globalized economy in which we are forced to live today.

The air is very polluted, there is a cloud of pollution over all major cities. This is due to factory and car emisions, this was worsened during the time of the Gulf War, when gasoline became scarce, and new types of lower quality were introduced. We also use diesel extensively, and cars are not requiered to have catalitic convertors to clean the exhaust fumes, nor to use non lead gasoline. All our oil products are imported making them very expensive.

Our social and economic situation and policies can be summarized by stating that all of them are determined by the economic dependency of our country, and by the social and economic policies of the IMF/World Bank, which forces us to apply structural adjustment programs: cut all private services and privatize, be open to private investment and enterprise, modernize and technologyze industry and education (which now is mostly training) in order to develop an export economy. During the war our economic dependancy worsened as most resources and production were dedicated to war purposes, while many industries closed or left the country. Our national budget was 1/3 direct "aid" from the United States, 1/3 the monthly family remitances from refugees in the U.S.. Today the U.S. has already decided to lower is "support" by 60%, and many of the refugees have returned home, drastically reducing the family remitance line. This situation can only make more demands in the already deteriorated natural and social environment.

Although there is now a governement's national office for the environment, and a national office for environmental rights, as well as a coalition of environmental ngo's the "developers" continue to cut wooded areas near the ever growing capital and major cities, to build houses, most of them with asbestos materials; trash continues to be produced by the tons, and the piles are all over cities and countryside; there is no education about recycling, nor about water conservation and management, and what is more, the government just finished a multimillion dollar project to bring water from the largest river hidroelectric dam, many kilometers away, to the capital city--this while car owners continue to hose their cars to clean them, and while maids use water hose as brooms to clean the sidewalks. There is no appropriate sewage and treatment system, and all factories deposit their polluted waters into sea, lakes, and rivers. Most impoverished and marginalized communities live on the side of the rivers, using it and its waters to satisfy drinking, washing and bathroom needs. Epidemics such as cholera and tuberculosis are thus something common and expected. The envirnmental concern was a presidencial and mayoral campaign issue, but the educatiion that needs to be carried to solve this problem became even more politicised and clouded.

Food is very expensive, and there is no practice of food conservation, and because of the war the majority of people especially rural ones learned to live with less, and now their diets are reduced to beans and tortillas, tortillas and salt, and they eat once or twice per day. There is a very low calory intake per person. We have seen this situation in our work in the country side, the rapidly increasing loss of tradicional knowledge, about the use and understanding of medicinal and nutritional common plants, and we learned that many of them are facing extinction.

In the last decades people in general have become more dependant on chemical fertilizers and pesticides even for food production, this is the result of very direct, agressive intentional programs to this effect, often sponsored by international government aid agencies collaborating with petrochemichal corporations. Through these programs the people are made to see how much more they could produce, and earn with these practices, but they were not educated about the harm and dependancy for the soil, nor of the spiraling cost of thse chemichal products. Many peasant and indigenous people have had to put their small plots as collateral for loans to buy seed, fertlizer and pesticide, and soon they have lost their land to the bank, unable to meet the payments. This happened especially after in 1980 some land was distributed through an agrarian reform law.

Though usually the whole family participates in the various processes of planting and harvesting, it is mostly the young boys and the adult males that take this responsibility. The women are left to carry water, cook, wash, take care of the children, sell produce in the market or streets. However we must see that all these activities are also ecological acts. They can disturb or enhance our relation amongst ourselves and with our environment, and our practice can contribute to an understanding of how, for whom and for what to use our natural resources if we are to have a healthy family and enjoy sustainability, and quality of life. The fact that generally females are not involved in planting and harvesting, usually results also in their not having the right to own any land. This has happenned even in the land distribution program that resulted from the peace agreements. As weak as the program has been, we have seen that the male in the family was to receive the tittle, and that for women to get one, was it was only after a struggle. This still is something that has to be fought for intentionally, consitently and continually.

B-The Instituto Internacional para la Cooperacion entre los Pueblos-Internacional Institute for Cooperation Amongst Peoples-IICP, the Centro de Investigaciones Antropologicas para el Desarrollo de El Salvador-Center for Antropological Research for the Development of El Salvador-CIADES both ngos' (legal status in process) carry out concerted efforts with associations, groups, committees, cooperatives of indigenous and peasant communities in El Salvador in order to bring about educational programs and actions related to the development of a National Rural Leadership Network for Quality of Life. For us quality of life means to have the kind of environment and conditions which would enable people, families, communities to work for full human realization in a healthy environment. We understand that in order to move in this direction, we must work it through the concept of Sustainable Communities. That is, a group, cooperative, association, committee, etc. will start by taking a look at its community, ground itself in the understanding of its vital needs, and what defines them, how they are rooted in the economic, social, political, cultural, environmental and spiritual conditions. Thus grounded they look for solutions that come from their own persons, families, communities, history, taking into account all the aspects mentioned above. It is from here that we start, in order to attain sustainability, and if there is a need to look for any type of ouside support, it is done, but only as support and not as the solution. All the aspects mentioned must be relevantly worked on, even though needs and conditions of people and commnuities will determine where the primary focus of departure will be. Another key aspect is that the participanting group brings all their members in, males, females, extended family, friends, young and old. All of them must be touched by the experience and enabled to participate and contribute. In our case the soil and water conservation and management aspect, traditional, natural and preventive medicine, cultural and spiritual aspects are very important points to focus on and for departure to work on sustainability for quality of life. This is especially important because of the post war social conditions and our deteriorating environment.

Both IICP and CIADES are made of a small number of educators, social scientists, community workers, indigenous peoples who are committed to this understanding and who want to make a contribution to this type of development. They act as facilitators and resources to the communities, groups, associations, cooperatives, etc. the work is always concerted, and whenever appropriate, if the community wants, government and other private and international groups are invited to work together with them. We also have regional and national gatherings where international people from the region are invited to cooperate depending on interests and commitments. Our efforts are also intercultural (indigenous-mestizo, urban-rural, national-international, interethnic), men and women and intergenerational. Special attention is provided also to assure full participation and development of children and youth, and for that of women.

C- The National Rural Leadership Network for Quality of Life works with the concept of Sustainable Communities as it was explained above. The purpose is to develop knowledge and knowhow amongst peoples in the rural areas, and in cooperation with city groups and relevant entities (universities, educational groups , churches, etc.) to rescue our national resources--water, soil, medicinal and nutritional plants, our culture, spirituality. We teach members chosen by their community or group, organic soil and water conservation and management practices, to analyse the socio-economic-political conditions, history and culture, and to see that the same way that we can live respecting our environment--making our own organic fertilizers and pesticides, conserving water, fuel and food, having our own family medicinal and vegetable orchards--we must also do with and in our communities, and homes. It is in this same way that long lasting solutions to our problems must come from within, and in cooperation and mutuality. This is a contribution that can have long lasting effects, as long as it becomes a practice. This is a way to live and build peace, and not only to struggle for it. The only thing that it is asked of the partner groups is that they send representatives to be trained, who will practice this experience and knowledge, and that will be committed to share it, as well as to continue to learn. The expenses, come from our own resources, communities and people, as well as for very small grants that are sought for the particular program and purpose at hand.

Regional and national trainings are carried out, and especial children and youth enrichment alternative schools that meet for 15 days for especialized trainings to rural children and youth who due to work with their parents, or economic needs have dropped out of school. A large percentage of ruaral children and youth face this situation. The program teaches techniques for sustainable agriculture, family medicinal and vegetable orchards, cultural, recreational and historical aspects, and basic marketing, administration and planning skills. There are follow up weekend gatherings by community or region, and local visits to those involved. We have special programs for women, because they need special time to be able to bring their participatory and leadership skills, since they are usually relegated to stay at home, and the most illiterate sector. They learn all the aspects mentioned above, and others which they identify. These are mostly two day and one day meetings to respond to particular needs of the women of that group, region, or community--legal, health, family relations, nutrition, etc . They usually participate in the more general trainings, in the planning, and carrying out of the programs.

D- We have chosen to look at a program which we carried out in a very rural community in north eastern El Salvador. These are various "caserios," very small villages, around the town of Cacaopera, an indigenous community. We met in Estancias, Calavera and Rodeo. This is an area that suffered bombing and scorched earth, the people are impoverished and the same can be said of the land. The water supply is drying. We did this program less than a year after the peace agreements were signed, and the purpose was to work with the various aspects mentioned above, at a time that the people were repopulating the area, most of them had been directly hurt /affectedby the war. It took, at the time, a few hours climb, complicated by the fact that it was the raining season, and that the road is mostly clay.

We had sharing experiences and needs by community, then we walked the farm which was lend to us for training We discussed what we saw and the environmental conditions, and various causes that contribute to their deteriration. Visited the "Ojo de Agua," the small creek, at its original source. Talked there about its physical deteriorating conditions and what are the direct negative results of that. Then we gathered back at the house, and drew a picture from the descriptions provided by the participants, the conditions we observed in the land ( a steep, eroded deforrested hill), and the condition of the" Ojo de Agua". We then discussed the problems which these conditions meant to the people, what they would like instead, and some ways to reach that goal. Everyone participated of this part of the program.

Then a commission went to work with the children enrichment program to another area and house. They learned about their ethnic background, learned names of fruits, food, things--especially theose related to the environment-- in Lenca, the indigenous language of the region. We talked about the interrelations of birds, land, animals, plants, soil, water, humans. Why the parents were learning about the soil and water conservation and management, how the children can participate and help. Learned ethnic songs, dances, games, and to make their masks, and other materials for their dances. and they prepared the closing cultural celebration

A group of women and some men, planned and cooked meals, one of the facilitators worked with them to make the relations to sustainability, to sustainable agriculture, nutrition, health, hygine, family orchards, composting, letrines, water and fuel conservation, food conservation, and how all these are related to the work that the other men and women were doing in the soil and water conservation and management training, as well as to what the children were doing. They walked in the farm and found various plants and vegetables useful to make a more delicious, nutritious, better smelling and abundant meal. Time was taken to talk about space distribution in the kitchen to protect food, collect recycle left overs, use of ashes, and fire wood, smoke disposal and in general to have a more confortable place of work, and to live. The kitchen compost was also prepared and its placement, up keep and use was discussed. Then they visited the training site while they were building the "A" apparatus which is used to dig the countor trenches. Later they were called to watch its actual use. Seasonal fruits were collected for desert and breaks, and hammocks hangged under trees and porch for relaxation.

At meal time they shared briefly about the meal, how and with what they had prepared, and its basic nutritional value. Children and adults gathered together for the meals. This was the process used for each meal preparation and comsumption. At night , there was cultural celebration--music, dances, stories, theater-- after a brief sharing by group of the main learnings of the day. At the end of the week long event there was a sharing of learnings and pending needs and challenges, and the children shared fully their experience, and carried out the closing celebration.

There is an unedited video of this experience. Neighbors and passersby who were not participating in the experience were able to participate in this last event, and in the nightly programs, or stop to observe the work. There was a team of Mexican anthropologists, a woman and a man, who accompanied the experience and documented oral history.

This is a very good example of how this process works and responds to the needs of a community. Some of the leaders participated in a previous training carried out for the region in the closest main town, Cacaopera. They went back to their communities and later returned to request that a training be carried out in their area. They had to coordinate all the local efforts, and the recruitment, by community representation, and IICP-CIADES prepared the training with their input.

E-This process is very participatory, people who request the training must be committed to the principle, but also must do a lot of the leg work to coordinate the local effort and follow up. Materials used were "A" apparatus which they build with existing materials, a level, machetes, and other agricultural tools, which they could also improvise. Drawings: on blackboard, land, paper, with the input of the people. Encourage use of inventiveness, creativeness, this is very important to affirm people's power and its exercise, as well as to stop dependency. At each place those people who know the traditional history, the ethnic language, the medicinal plants, and who represent other resources for the community are identified, even if they are not participating, and they are invited to share a meal, or a cultural event so they can share and get to know the people. Each time a small library of easy reading and drawing books has been left. The people are encouraged to start their own, even if small, "living museum" with historical and historical materials that they find in the area, and especially as they dig for the soil and water conservation. The people in Cacaopera have already started theirs and they are carrying sharing trainings in culture, traditional medicine, ethnic plurality, women's commission. The people in Estancias have started to prepare their crops applying the soil and water conservation techniques, as well as the composts, and the various aspects learned on nutrition, and health. They have had follow up trrainings and continue to participate in the sharings in Cacaopera.

F-The support materials are developed with the participants. The majority of people with whom we work do not know how to read and write. When ever possible we take materials that those who read can use as reference, and which are basic materials on the subject. We are trying to produce materials resulting from these experiences, a book on traditional, natural and preventive medicine with their inputs is being prepared. Participation and the cultural aspects have been our best support. Songs that they prepare, theather, and the sharings. From the challenges found we systemathized research and prepared a book on the Indigenous Presence in El Salvador. The videos were made by one of our team and though they help to tell the story, they need editing. We also have some pictures.

G-These process helps to unify efforts, and to understand the importance of concerted and cooperative efforts. People see that they have the power to initiate and carry out programs. They see the importance of sharing responsibilities, and that if they have a project they need to bring about, they can work in concert to carry it out, and that they can invite church programs, government and other communities to participate. They have seen the importance of all the people participating. Now men are also in the kitchen, and women are learning all the processes involved in sustainable communities, and sustainable agriculture, while children are also having the opportunity to develop and learn about this process, and being exposed to many other opportunities, and communities. There is an understanding of the need to have a practice of organic farming for their health and economic benefit, but also how this is intricably related to the future of their community, their children and the sustainability of the country. Cultural and recreational aspects are an integral part of these programs, as well as reflections on quality of life, which deals with spirituality. The relation of sustained peace to sustainable communities is also being explored and understood as we carry the various steps of the program.

# COMMUNITY-BASED RURAL DEVELOPMENT PROJECT
# AS A VEHICLE TO
# COMMUNITY OWNERSHIP, EMPOWERMENT
# AND
# CULTURAL RECOVERY

## A DRAFT WORKING PAPER OF THE CASE STUDY

prepared by José Zárate

May 1994

# Community-Based Rural Development Project as a Vehicle to Community Ownership, Empowerment and Cultural Recovery

by José Zárate

## INTRODUCTION

The Community-Based Rural Development Project (CBRDP) was introduced as a project idea in 1989 to some members of the immigrant community of the Hamilton-Wentworth region in Ontario, as well as Indigenous people from the neighbouring Six Nations on the Grand River and agricultural specialists from the University of Guelph. The initial goal for this project is: to identify and assess agricultural training needs of the Hamilton and Six Nations communities and to develop the CBRDP accordingly, to address the needs of the two target populations.

Following several consultations with subsequent feedback from both communities, a federal financial agency in 1990 recognized Plenty Canada as a sponsor organization to implement the CBRDP, because of Plenty Canada's international development expertise record and cultural sensitivity in working with Indigenous communities around the world. In the fall of 1991 Plenty Canada was awarded the financial support from Employment and Immigration Canada to pursue the (above-mentioned) initial goal.

The CBRDP provides a unique approach in that it looks to Indigenous culture and knowledge in agriculture, and the development and distribution of Native food products, as a means of identifying valuable cultural, educational and training opportunities in a number of areas.

## AS A MODEL FOR TRANSFORMATIVE LEARNING

Indigenous cultural knowledge, philosophies and technologies provide the guidelines for the CBRDP's proposed agricultural, enviromental and educational activities, while acknowledging and incorporating the experience and wisdom contributed by the Indigenous immigrants and/or refugees. Furthermore, the project incorporates people who traditionally and historically have been excluded from full economic participation, and recognizes the value of "non-traditional" skills, abilities and experiences. At the same time, an opportunity is given to enhance knowledge and to access information and technology.

Both women and men were represented among the key informants and individuals who completed surveys in the first research phase. The issues of gender were not discussed in the research phase separately. The project used the "Family" unit as the main variable in the social evaluation. This unit includes women in particular, and men and children in general. Women are the important element in the family unit as a mother, wife, single parent, and contributor of the household income. Every decision of the household affects the well-being of all of its members (family unit). The four leaders who will implement the project - one from Hamilton and three from Six Nations - include a woman from Six Nations on the Grand River.

The method of the agricultural training also is participatory. There is constant feedback from all groups in this learning practice. The trainees involved in this educational process are adults. Some of them need English-language training; others need more agricultural and technical training.

The common denominator among the trainees is that they are unemployed or welfare recipients. The training per se can be classified as adult and popular education. This is based on the fact that the median age of the trainees is 35 years, and because the trainers from Six Nations, whose teaching methods are hands-on-the-job, lack formal education although their knowledge in agriculture is rich. The trainers have accumulated the wisdom of older generations transmitted to them by oral tradition.

Education is an important part of this Plenty Canada-supported project. People both in Hamilton and at Six Nations will have the opportunity to learn or relearn traditional Indigenous agriculture. This training will produce and supply all-natural foods, free of chemicals, fertilizers, and pesticides, and will contribute directly to the good health of consumers. Moreover, the impact on the natural environment is a positive one, because the basis of the technology and system for the development phase assures neither contamination nor pollution of the land.

The social impact will be measured by the harmonic relationship among all participants, i.e. the trainees, the trainers and project leaders, and their vision of sharing responsibilities in protecting the environment through agriculture. The project will promote team work against competitiveness among all members of the project. The benefit to one member is a direct result of the work/contribution of another member of the project, and vice versa.

In addition, the project leaders plan to offer presentations of this agricultural training to schools from Six Nations and neighbouring communities, and visitors in general. The types of materials that are used to supplement the educational activities are slides, videos, films, pictures, personal stories, hand-outs and books.

People involved in this programme training will regain self esteem, which then will contribute to breaking the cycle of economic dependency. Being in touch with the land, the trainees will learn patience, and put into practice their new updated skills in agriculture. Moreover, the implicit benefit of this education will be cultural and spiritual recovery for many Indigenous peoples.

This work is transformative because its an integral and evolutive learning process. It is integral in the sense that trainees will receive the needed technical factors of their education in addition to the social and cultural awareness of Indigenous peoples' contribution to the Western Hemisphere, and the relationship of spirituality with the land. It is evolutive because all participants will learn strategies of how to live in peace and be protectors of future generations. Their knowledge will increase with the training as the time increases.

The education strategy to be used in the project is based on mutual respect and trust. Every participant is responsible for accomplishing their duties/training requirements. There is an open communication between trainees, trainers and project leaders; everybody is equal. The knowledge that one has does not mean power and control; it should be shared and not monopolized. Everybody has the potential to contribute to a better society. This strategy will provide the opportunity for intellectual development of everyone without any limitation. The only obstacle will be the one that the individual puts on him/her self.

## INDIGENOUS HISTORICAL BACKGROUND

Indigenous peoples of the Americas have made significant contributions to the world in the areas of food, medicine, and technology. Foods such as potatoes originated in the Americas. Many common remedies used in modern medicine were developed by Indigenous healers prior to Western contact.

The diet of the Indian of the Americas was based on organically produced fruits and vegetables. This created a vast civilization of 118 million people in the Americas. Indigenous microbiological sciences were based on healthy and nutrient-rich soils, not requiring pesticides, herbicides or micro-organism-attracting manure fertilizers. Microbial infestations after 1492 ravaged the delicately preserved Americas' soil-base, with the disastrous affect of creating an unparalled "plague" which decimated the Native population.

Throughout history, human societies have passed on hard-earned lessons and knowledge crucial for survival. This Indigenous wisdom has been passed on to suitable initiates from generation to generation. But colonialization and "modernization" have threatened the survival of traditional Indigenous peoples throughout the Americas, and the knowledge they possess is on the verge of disappearing with them.

Discovery of the New World brought about a revitalization of European culture, which would lead to the Industrial Revolution and the pursuit of raw materials and markets, which in turn would lead to worldwide European colonialism on a grand scale. Debilitating dependencies created by colonial mismanagement of Indigenous lands and resources struck deeply into Native society. The promotion of anguish and despair in the Native terrritories has been a well-documented consequence of the government policies of the United States and Canada right up to the present time.

The survival of Native people in North America was predicated on several crucial factors. These factors encompassed the physical Basic Needs of food, shelter and self-preservation. All three Basic Needs were reconciled to the Native notion of Highest Virtues. The Highest Virtues for the individuals were Courage, Humility, Wisdom, Temperance and Justice. The Highest Good for the Nation was survival. The means to Survival was Peace.

The present and future Basic Needs of Humankind and the survival of individual Human Potential are completely adddressed in Native Cultures' social framework and spiritual infrastructure. Self-discipline and socio-spiritual responsibility were consistently manifested in outward expressions of Environmental Consciousness, Social Responsibility and Tribal Reconciliation to the Living World.

It is common knowledge Native people did not pollute because their form of society did not require industrialization. A major reason industrialization did not occur was because Native people did not maintain a potent military capacity. Thus, with a sacral form of warfare related to the Higher Good, the limited armaments, armies and populations served to restrict undue exploitation of natural resources. The eco-system remained intact. The Nation survived. There was Peace.

The cultural technique of Native civilization, in the past, was fully integrated. Native Culture maximized individual reconciliation socially, and societal reconciliation environmentally. In modern terms, Native Human potential has been replaced through the destruction of the delicate balance between the three-fold reconciliation of Man to Society and Society to the Living World. Yet the secrets of Life are known to Native people. Highest Goods are still known to Native people. The social, environmental and spiritual knowledge exists.

In April 1987, The World Commission on Environment and Development (the Brundtland Report) warned governments of the adverse impact of continuing to exclude Indigenous societies in the world from the processes of development. The Brundtland Report suggests that industrialized nations could learn a lot about sustainable development from Indigenous peoples.

## SIX NATIONS' AGRICULTURAL HISTORY

Throughout the history of contact the people of the Six Nations Confederacy have been given special attention for their agricultural practices. Staple foods of corn, beans and squash supplemented a varied diet which included natural vegetation like watercress, milkweed and berries, as well as fish and fowl. Important for the festival calendar, red meat from the deer was served approximately 10 times per year. It is estimated the stable traditional economy of the Six Nations supported a population of 1.27 million people prior to the American Revolution.

The Six Nations people, like many members of Indian nations within the Western Hemisphere, enjoyed diversified agricultural sciences. The accumulated knowledge such as corn "hybrids" and potato varieties, planting and irrrigation technologies were shared in continental trade networks reaching from the Yucatan Peninsula's tropical gardens to the wild rice beds of the Ojibwe at Lake Superior, Ontario, and from the Micmac fisheries in the Maritimes across to the valleys of California's Pomo gardeners. Both women and men participated in the delivery of harvests.

There is little question that since contact with colonizing European peoples, traditional Iroquoian institutions have been under great stress. Following the American Revolutionary War period, Iroquois unity was broken and independent control over community economic life was severely restricted. This era brought forward sweeping changes that included: shifting family structures "from the longhouse to the loghouse" (or from extended clan families with women at the head of the household), religious conversions from Indigenous spirituality to Christianity, economic freedoms that allowed access to the land's resources to reservation systems that restricted hunting, fishing, gathering and other sustenance practices and forced political oppression that sought to convert Iroquois nations to minority populations. Throughout this prolonged process of cultural intrusion and the breakdown, but not destruction, of traditional Iroquois institutions, certain valuable aspects regarding organizational principles began to fade. The myriad divisions now in place within the Six Nations make pro-active community developments much more difficult.

After the American Revolution and resettlement in the Haldimand Treaty area of Iroquoia, the remaining 50,000 Iroquois began to participate in the Great Lakes market economy around 1790. From 1790 to 1830 the Six Nations boasted an array of agricultural activities which included corn production by Cayugas near Port Maitland, the Onondagas near present-day Ohsweken, and cereal monoculture crops and grist mills by the Mohawks from Brantford to Galt, Ontario. (The Six Nations Confederacy includes these nations: Cayuga, Onondaga, Mohawk, Seneca, Oneida and Tuscarora.)

In 1830, European colonists put extreme pressure on the Six Nations people. From 1830 to 1890 militia and colonial mobs burned the Iroquoian settlements from Port Maitland, Galt, to the Oxbow, the Oneidas at Cainsville, and the Onondagas at Middleport. Fleeing Six Nations people finally settled on a strip-forested section of land, the site of the present-day Six Nations on the Grand River.

Six Nations again became an active participant in the agricultural economy. Some of the finest harvests, in terms of bounty and quality, were brought to market by Six Nations farmers until the turn-of-the-century. The Six Nations on the Grand River was under constant pressure from communities upstream from the Six Nations community. Constant complaints from the Six Nations Confederacy Council of Chiefs failed to have communities like Brantford, Paris and Galt, monitor their raw municipal waste effluent being dumped in the river. From 1907 to 1919 five small pox epidemics swept through the Six Nations, casting a black cloud over the produce brought to market. The epidemics were linked to the Grand River water.

By the 1940's, the only important agricultural export from Six Nations was the expertise and transcient labour. A few farming operations existed; however, from the 1940's to the 1990's, many Iroquois people augmented their incomes by working on farms in an area stretching from Delhi through to St. Catherines, Ontario. In fact, much of Six Nations' expatriate population is comprised of families who resettled off-reserve in the agricultural belt.

The loss of agricultural activity, measured in knowledge and skills, has been a significant factor in the economic and cultural decline of the community during the past few generations. This has taken place while the market demand for foods and food products, as evidenced by the increase in population and food service businesses, has grown dramatically.

To improve the tertiary economy in Native territories there is a need to develop a suitable culturally appropriate infrastructure. Various levels of Crown governments have resisted the development of permanent infrastructural supports, except where obliged through treaties or other legislation. Having removed Traditional Governance and destabilized the social and cultural systems of Native people, a deeply rooted beggar mentality is perpetuated by Government and Media. If the Crown and Canada were to accept the Native wish for self-sustaining community development, there would be a movement to assist Native people in producing their own food, building their own storage, greenhouse and market buildings. There also would be a movement toward documenting this information as a resource which would be of value to other impoverished peoples.

## THE CBRDP OBJECTIVE AND STEPS

The CBRDP aims to develop a new approach in job training and agricultural development for the improvement of living conditions of the local population, and is an optimum alternative to reduce unemployment and welfare.

The need for balanced development activities has become increasingly clear at Six Nations. Ever since the community departed from its agriculturally-based economy in the 1800's to an agriculture and industrial labour-based economy through most of the 1900's, and to the retail-based economy in the 1990's, the community has been in search of balance. Appropriate sustainable development can be achieved when the Iroquois people at Six Nations on the Grand River begin to research, design and implement ways in which fundamental human needs, such as food supply, are returned to community control.

The social, cultural and economic parameters of the vision for the CBRDP were developed through consultation with key community informants, including farmers and gardeners, economic development specialists (private and band council), cultural resource people and business people interested in tourism industry development.

The proposed steps in the CBRDP include the following:

- Training in organic (Iroquoian) agricultural methods that produce and supply "all-natural" Native foods.
- The development of a community-based food co-operative to be named "Indian Foods of the Americas Co-operative." This organization is to be responsible for recovering and then integrating the indigenous knowledge of both the Six Nations peoples and the Hamilton-Wentworth immigrants.
- The design and construction of a farmer's market to be located in the village of Ohsweken, in the heart of the Six Nations on the Grand River. It is recommended that the farmer's market provide and feature: market space; public programming space for educating visitors about the contributions of Indigenous agriculture to the world's food supply; office space; and food processing space.
- The continuation of development and market testing of food products (value added) that are based upon Indigenous foods of the Americas and that are standard within existing dietary patterns. These might include corn products such as White Corn Flour, potato products such as a Seneca Blue Potato Chip and berry products such as strawberry jam and red currant jelly.

## IMMIGRANT PROFILE OF HAMILTON-WENTWORTH AREA

The current recession has caused the closing of industrial manufacturing plants resulting in massive lay-offs. Statistics Canada in April 1993 reported that the unemployment rate in the Hamilton CMA (Census Metropolitan Area) rose to 12 percent - the highest level there in over a year. Since 1990, the percentage of part-timers among the Canadian workforce has risen to 21.4 from 17.9 percent. The free trade deal with Mexico and the United States cannot help but reinforce the dynamics causing these shifts in job prospects. In this context, NAFTA (North American Free Trade Agreement) will surely tempt highly mobile corporations to choose low-wage Mexico over the high-wage United States and Canada.

The probable migration of industry may accelerate the deindustrialization of the whole northeast of the continent, including Canada's crucial Quebec-Windsor corridor where 54 percent of the population and two-thirds of the country's industry reside.

The service sector now accounts for close to 70 percent of Canada's total gross domestic product (a measure of the total value of goods and services produced, excluding household and volunteer work). Just as the decline in the importance of agriculture in the 19th century was the catalyst for increased economic growth, the ongoing loss of manufacturing jobs is a natural consequence of the economy's advancement. In today's economy the two industries have become almost completely interdependent as manufacturing companies buy more from service firms and vice versa.

Hamilton-Wentworth is faced with a movement away from large primary industry. In the past large industries played a major role in providing employment opportunities. Faced with a possible continental shift by industry toward lower wage workers in Mexico, residents of the Hamilton-Wentworth area will be looking for multi-partite strategies to maintain a reasonable quality of life.

Disillusionment with "state of the art" economic development theories should be compelling enough to cause fundamental analysis for diversifying the local economy. Why do we need development? What kind of development do we need? As the economy is shifted away from primary and secondary industry to tertiary and quaternary economy in Hamilton-Wentworth, we should be compelled to anticipate what sort of community we want in the future.

Hamilton-Wentworth is one of the most culturally-diverse communities in Canada, housing 101 different ethnic groups speaking 155 different languages (1986 Census). The immigrant population as of 1986 comprised 105,035 people or 25 percent of the total population in that area. Since 1970, a major change in the composition of immigrant populations shows new groups from Asia, Africa, South and Central America, and the Caribbean, away from former immigrant groups mainly from Europe and the United States.

Recently arrived immigrants, especially those from Third World origins, still retain many facets of their parent cultures. The process in which immigrants, individually and collectively, become settled and adapted into the Canadian society, particularly in an urban setting, is a complex of many factors - culture, race, religion, language, political affiliation, socio-economic status and immigrant/refugee classification. In addition, racism, social injustice, insensitivity, discrimination, and value judgements are prevalent issues associated with settlement and adaptation processes.

Moreover, moving to a new country, surrounded by unfamiliarity, uncomfortable with the language and culture, separated from family and support networks, unemployed or forced to labour outside of the skill or professional level previously acquired, many immigrants express feelings of depression, anxiety, isolation, fear and stress. Low self-esteem may result from their inability to find suitable employment due to language differences or non-recognition for their skills or professions. In addition, the feeling of being unable to exercise control over one's destiny significantly affects one's self concept.

In Hamilton-Wentworth, large sectors of the population have strong community ties. Appropriate economic functions could be devolved to these communities which in turn would raise the visibility of the family in a community context, with social benefits through family stability. The development of self-help and mutual-aid programmes entails a planned return to self-servicing. Examples relevant to the case of Hamilton-Wentworth include: (1) increases in appropriate cultural industries; (2) regional and neighbourhood skills exchanges; (3) neighbourhood food co-ops and storefronts, and (4) community-based crafts/ products/goods markets.

## SIX NATIONS COMMUNITY PROFILE

Six Nations on the Grand River is in a more advantageous economic position than most Indigenous territories in Canada. Six Nations is located near three main shopping areas including the City of Brantford, and the towns of Caledonia and Hagersville. The workforce from Six Nations has been estimated at 5,200 persons. There is an on-reserve workforce of 650 persons, leaving 4,500 working in the non-Iroquois community. This total workforce is responsible for generating $145.6-million income, mostly spent in neighbouring communities. These figures do not include pensioners, socially-assisted incomes and undeclared incomes. (Note that although statistics differ between the Census department and the Department of Indian Affairs, the pattern of the workforce and population figures is similar.)

There are approximately 14,000 employable persons from Six Nations. Figured at an average of $105.00 per week at each of the 2001 estimated households on Six Nations, nearly $11 million is spent in the outside community on groceries alone. The Six Nations people import almost everything they use in their daily lives - transportation, electricity, fuel oil and propane, building materials, furniture, electronic supplies, appliances, even landscaping products. The single notable exception is the arts and crafts industry, today loosely organized around several shops and a seasonal pow wow festival tourist trade.

In conclusion, the shopping and buying habits of Six Nations could be altered by developing a stronger agricultural and food processing economic base, and the construction of a farmer's market. These in turn can interconnect with, and enhance, the tourism economy of the community.

## SELECTION OF PARTICIPANTS IN CBRDP

The participatory research approach of CBRDP recognized that not just "hard" facts (quantifiable data) must be gathered, but also "soft" facts (values, motivation and feelings). Research has been done on the premise that decisions are seldom based on rational facts alone: people act because of their awareness of the situation, their feelings about the situation, and whether action is consistent with their belief systems. Other factors include the communications system and the nature of leadership involved in decision-making. The motivation for the research comes from the perceived needs of the people in the community.

In the Hamilton-Wentworth area, a list of key informants was established among ethno-oriented and job counselling agencies, in consultation with the CBRDP Advisory Group whose members are mainly immigrants there. The Group included 12 individuals who met regularly from October 1992 to November 1993 to advise and assist with networking in diverse immigrant communities.

Among the immigrant-oriented agencies were some directed and managed by immigrants. Following a series of interviews with key informants, another list was drawn up of key contacts among ethno-oriented counselling agencies, social service providers and community members. These individuals then were contacted and interviewed as well in one-to-one interviews. This needs assessment process encouraged broad community involvement, to ensure that the unmet training and community economic development needs of the immigrant community were defined by the people who require these services rather than by government or private interests. Finally, a survey distributed among employment counselling and immigrant service agencies to determine the demand in agricultural-oriented needs for immigrants helped to determine the demand in these particular training needs.

Regarding the Six Nations community, select members who had an interest in agriculture and horticulture were invited to meetings in which they identified their needs and aspirations: farm equipment, access to markets, a community greenhouse and an agricultural training facility based upon Indigenous agricultural practices.

The dissemination of questionnaires was not an appropriate method of determining community interest in agriculture and agricultural training programmes, because of the cultural, historical and social perspectives of the target group at Six Nations (one that is distrustful of government agencies, studies and surveys). Instead, access to the community was provided by key informants there throughout the initial year of research. For example, Iowne Anderson provided constant community feedback based upon her attendance at community horticultural meetings and 4-H club meetings. Lehman Gibson's deep understandings of Iroquoian plant life and practical farming provided clear data on labour, mechanical and biological inputs necesssary to work the predominantly hard clay soils at Six Nations on the Grand River.

Six Nations community advisor Iowne Anderson identified the primary targtet training group to be youth ages 19 to 24. Long an advocate for educating young Natives about their cultural heritage, Iowne recognizes that the most positive responses to her presentations have been from younger people who are searching for ways in which they can further explore and practice their traditional heritage.

The Six Nations project team includes Elders who can provide the core agricultural values and Iroquoian farming knowledge, adults who can provide the administrative and organizational skills to translate and transfer valuable work experience, observations and findings into reports and work plans, and youth who can work as assistants to the Elders and adults, gaining experience from both levels. The hiring of a project team that included Elders, adults and youth was a deliberate action by the project directors to reconstruct a balanced Iroquois social work group that would be able to accomplish positive, beneficial and long term community developments in the agricultural sector. It should be noted that historically during those times when the Iroquois were highly productive and involved in economic developments, community-based movements were not driven by the consensus of the entire community, but instead were driven forward by groups of people truly interested in those activities.

## CBRDP CONDUCTS TEST PLOTS AT SIX NATIONS

A CBRDP objective, from an agricultural perspective, was to experiment with different crops to examine how well they were suited to the Six Nations on the Grand River territory's climate and soil types. This experimentation would include evaluation of crop yields, and barriers to high production. Eventually successful crops would have to be selected according to their potential market value.

Within the Six Nations community's total land area of approximately 45,000 acres, 62 percent remains viable agricultural land, which is the sum of productive farmland (33 percent) and abandoned farmland (29 percent). Twenty-seven percent consists of forest lands while only four percent is identified as barren lands.

In the spring of 1993, four test plots were chosen for crop trials at Six Nations on the Grand River. A soil sample was taken for each site to measure nutrient and organic matter levels, as well as soil type. All gardens received cattle manure in late spring. Crops in which the CBRDP project is particularly interested include: corn, field beans, squash, strawberries, red currants, potatoes, tomatoes and peppers.

From the results of the 1993 summer gardens project, an expanded agricultural plan now is being designed that will utilize much of the vacant, unused land present at Six Nations, as well as provide education, employment and economic opportunities for all participants. Eventually the project's influence may be felt throughout the Six Nations community and also within the immigrant population in the Hamilton-Wentworth region.

## THE CBRDP AS A CO-OPERATIVE APPROACH

Co-operative approaches, in the context of rural development in Canada, have played a substantive role. Co-operatives today are a significant economic force in Canada, and in fact have become the third sector of the economy, thus constituting an alternative to private and public sector forms of economics and employment.

The key control of much of the rural economy is maintained outside of the rural area. Investment, production and processing decisions made by outside corporations do not arise from local economic and social needs, but rather from the financial and organizational priorities of the corporation. In consequence, much of rural Canada suffers from a type of exploitative underdevelopment.

In contrast, the CBRDP is representative of the co-operative philosophy which espouses communitarian and democratic forms of economic develoment. Such a community-based development is a useful mechanism for previously colonized peoples because the process enables communities to sustain cultaural continuity and decision-making, ensuring community cohesion.

It is therefore envisioned that the co-operative to be established by the CBRDP will retain and strengthen the traditional organizational structure at Six Nations on the Grand River and the values currently in place. The co-operative's structure must not encumber it with formal responsibilities to governmental agencies and organizations.

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# "Navdanya" - a grass roots movement to conserve biodiversity and sustain food security.

*Vanaja Ramprasad*

Green images of Kerala's country side come back to me from my childhood. I lived my childhood in a town bordering Kerala, and hence my visits to Kerala were frequent. I recall a piece written by a poet O.V.Vijayan "Cry the beloved country : Did Blight hit a Glorious Land?" He describes the blight as a subnational mercantalism that has replaced a life style of holistic fulfillment. He recalls - "sardines and prawns were once the food of the poor, it was still possible for a hardy peasant to feast occasionally on a stew of tender cashew. There was an abundance of seasonal fruit : mango and jackfruit and pineapple and varieties of plums and berries. In our unique spreading out of home steads, where even the very poor had a little plot of land around their huts, there was at one time hardly anyone who did not grow something or other. Root tubers needed no tending, and pomegranate and guava and custard apple grew wild on the hedges. We could fish with our upper cloth in streams and within yards of home and often after the rains had poured and the lightning iodized the air into an elixir, the big fish would crawl up from the slush of the field right on to our backyard. That was the time when we raised much of the rice we needed, not the hybrid feed of today, but fine aromatic rice which filled the kitchen and corridor with the scent of cooking".

This brief recall of yesterdays by O.V.Vijayan is incisive and sharp. This is precisely what we observe all over the country and increasingly so in the recent years.

The crisis of modern development is what O.V.Vijayan refers to as the blight that hit a glorious land. One of the manifestations of this crisis is the loss of diversity, which is the basis for ecological stability and food security for any community.

Communities all over the world have well developed knowledge and ways to derive their livelihoods from the bounties of nature's diversity in wild and domesticated forms. Today, however the diversity of ecosystems, life forms and ways of life of different communities are under the threat of extinction. Be it the tropical moist forests, or marine ecosystems or agricultural ecosystems, the same impact has been felt.

**Why hunger ?**

This question remains as relevant an issue even today as it has been for thousands of years. The answer cannot be the same as it was in the past. the enormous expansion of productive power has taken place, especially in agriculture, to guarantee adequate food for all. Yet the perisistence of chronic hunger and the severe shortage of food in some parts of the world, despite more than adequate production opportunties, poses a range of questions that would not have been immediately relevant in the past when production possibilities were much more limited (1). The answers to 'Why Hunger ?' in today's context are contained in the entitlement analysis. This particular aspect of the prevalence of 'hidden hunger' deals not only with the inadequacy of food but also with the processes that lead to the failure of the individual to be able to exercixe his or her right of food. The impediments to the entitlement to food can occur due to a variety of reasons. A decline in the entitlement to food on the one hand directly affects those whose means of survival depends on the food that they grow, and on the other, those who have to buy food. The links in the food production chain are important as a source of supply of the vital commodity, as a mainstay of employment and income and as entitlement to a vast section of the rural population.

These links however cannot be seen in isolation from the principles of nature. This case study attempts to examine the various issues that surround hidden hunger and food security in this context and capture the anomaly of plenitude perpetuating poverty and hunger. The situations described reflect a gamut of issues that travel through a maze of complexities, that are interlocked and never surface as information to the common man. Many a time one hears of very naive claims like 'the farmers are better off now than they were before'. It may be true that there are waves of plenty and poverty and that cyclical patterns emerge. The intention is not merely to use these particular situations as evidence to build up the case but also to carve out the long-term implications of the exploitative relationship with nature, and the sustainability of the modes of production. Nature is a whole piece, an intact cell in which everything is in close linkage with everything else, right from atoms, molecules, compounds and colonies of organisms to the apex of the ladder-----man. Another important factor that must be given due emphasis is that nature does not tolerate uncontrolled growth of any one species in relation to other species due to the carrying capacity of an ecosystem. Nature works towards a balance. The biochemical systems exchange matter with their surrounding all the time. Recycling, symbiosis and antibiosis are the fundamental processes through which nature maintains its creation. There is recycling in the global system among the - land surface, the water surface and the atmosphere as well as in the microenvironment among the soil and the plant and the animal kingdoms. It has been established that there is stability in diversity (2).

While the social costs of diminishing diversity cannot be estimated, it is the gradual shift from an eco-centric to a techno-centric approach to food production that is at the root of several contradictions in today's food production system.

## The Green Revolution : A Euphoria of the Seventies

The euphoria that the green revolution will help generate a food surplus with the introduction of the dwarf high yielding wheat and the rice strains developed by the Rockefeller Institute in Mexico and the IRRI in the Philippines respectively, led people to believe that hunger would be eliminated and the improverished land would be abundant with food. On the other hand, several undesirable spin-offs from the new technology have been recorded.

The green revolution essentially became the wheat revolution since the share of wheat in the total cereal production increased from 15.23% in 1950-51 and 16.66% in '65-66' to 29.6% in 1978-79 and to 32.5% in 1983-84, and the coarse grains lost ground to wheat and paddy (3). This corresponds with the data provided by NNMB that there is no evidence of an increasing trend in the average calorie intake of the lowest income group (4). Prahalada Rao and Gowrinath Sastry have reported on the average consumption levels of food (gms cu\day) during 1975-81. According to them the consumption of pulses which constitute an important source of protein in the dietaries has not shown any perceptiable change.

Milk which forms an important item in daily life of an average Indian houeshold also showed an inconsistent trend with an over all intake of about 85ml cu per day indicating lack of expected benefit of "White Revolution" on its consumption levels in rural house holds of these states.

In general consumption of fats and oils and sugar did not show any perceptible trend. It has also been summed up by Dr. Gopalan in his analysis on the nutritional status of children in India. He states that there is no evidence of significant improvement in the nutritional status of children of poor communities in the country over the last few decades (5).

It has been observed that the regional disparities in crop production favoured the three northern states viz Punjab, Haryana and eastern U.P., and the benefits of surplus production did not percolate down to the other states. As a result, there has been a glut of food grains with the consequent cost of carrying the surplus and of safe storage. The increased local production was not in itself a solution to hunger. Initially the green revolution measures were considered as scale neutral, but contrary to expectation, the error was in diagnosing the problem of hunger as inadequate production, and the focus was on modernization. This in turn resulted in socioeconomic imbalances within the boundaries of the village, strengthening the position of the rural elite.

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With the increasing cost per unit of production, the price of food recorded an upward trend which prevented the poor from enjoying a fair share of the benefits of increased food production.

While the marketable surpluses were diverted to the urban sector, the technology itself posed several problems. A large proportion of high yielding rice varieties throughtout the world contained the same maternal parent, Deo-gee-woo-gen, which is an Indonesian variety. This causes in modern agriculture genetic vulnerability (6). Insects that were known to be obscure and relatively harmless before the introduction of HYVs proliferated due to a host of factors. The list of environmental and ecological consequences goes on to include the long-term effects of exogenous fertilizer, for instance (7). In many irrigated areas application of fertilizers has reached such a point of diminishing returns, that it would take 6.5 times as much fertilizer as is now applied to double their production. Together with this, it has been observed that fertilizer-based crop intensification has been associated with water contamination by nitrates and phosphates and oxygen reduction. In the case of rice cultivation, according to the seventh plan document, only 20%-30% of the nitrogen is found to be actually utilized in the plant's growth, the balance being lost due to a variety of reasons (8). The report of the high powered task force on rice breeding appointed by the Union Government concluded that most HYVs of rice are derivatives of the IR-8 having the dwarfing gene. This narrow genetic base has created alarming uniformity causing vulnerability to pests and diseases. Dr. R.H. Raicharia, a former director of the Central Rice Research Institute in Orissa and a renowned rice expert, says that the introduction of high yielding varieties has brought about a marked change in the status of insects like the gall midge, the brown plant hopper and the leaf folder (9).

To add to this expanding list of undesirable impacts, one may include data from one of the studies that looked at the pattern of consumption in the green revolution area. It has been pointed out that the patteren is inequitable, and that figures on the population below the poverty line are staggeringly high. The Bhalla, Chadda study in punjab revealed that one third of the marginal farmers (up to 2.5 acres) and one fourth of the small (2.5- 5 acres) and medium level farmers (five to seven acres) were living on starvation diets. This includes 16% of the landless labourers. Bhalla et al give a figure of 32% living below the poverty line which is distressingly high for a state like punjab which is among the developed ones (10).

In short, traditionally developed practices such as mixed cropping and intercropping, i.e. decentralized production of a wider range of crops evolved out of the need to have microlevel self-reliance, autonomy etc. This has been destroyed by the centralized market economy, ensuring the dependence of farmers both as producers and consumers such that the market determines what they produce and what they consume.

Attention has been drawn to the many facile notions and myths associated with the much trumpeted green revolution. A study done by H. Hanumantha Rao under the auspices of the Insititute of Economic Growth is an indictment of the new agricultural strategy launched in the mid-sixties and its aftermath (11). What the study has found is that, far from generating impulses of growth with stability not to speak of equity, the Indian farm sector has become in the post-green revolution period more unstable and more prone to the vagaries of nature. The success in dispensing with the import of food grains has been lauded as an achievement of the green revolution. Even this claim no longer holds since it has been decided to import food grains to rapidly replenish the dwindling buffer stock. Further, the study states that agriculture growth (all crops) after the introduction of biochemical technology has failed to maintain its pre-1965 level : it has fallen from over 3.0% to around 2.6%. The implications of these findings are that self-sufficiency in farm production including food grains has been achieved by drastically reducing the availability of farm produce to the poor, specially in the rural area (12).

Similarly, a study done by Kathleen Gough on rural change in S.E.Asia has documented evidence of the unimpressive gains from the green revolution in Thanjavur. (13) She states, Hybrid seeds chemical fertilizers and at least some pesticides had in fact come to be used almost universally by cultivators in the old delta. Whether small or large land owners or tentants, by 1976. This was true though theyield for small holders was often only a little if any higher than the traditional seeds using organic manure and even though the cost of fertilizers and pesticides was really high. The reason -they could obtain annual loans of upto Rs. 450/acre at 10% interest per annum through co-operative societies from the Agriculture Development Bank of which they accepted half the loan in fertilizer and HYVs.

Thanjavur District 1965-66 to 1978 -79
Acreage Under High Yielding Paddy Seeds

| | Acreage Under HYV | % of total Paddy Acreage |
|---|---|---|
| 1965-66 | 4,815 | 0.32 |
| 1978-79 | 14,93,892 | 99.24 |

Offtake of Fertilizers per Acre

| Consumption | ($P_2O_3$) (Tons) |
|---|---|
| 1959-60 | 1.00 |
| 1977-78 | 11.00 |

Distribution of Pesticides

| | (Tons) |
|---|---|
| 1960-61 | 271 |
| 1973-74 | 10,596 |

Filter Points and Bore Wells

| | | |
|---|---|---|
| 1960-61 | 243 | 50 |
| 1978-79 | 1,928 | 1,242 |

Source : IADP Office

Both yeild and total production occurred before chemical fertilizers were introduced in the early 1960's and certainly before HYV became widespread towards the end of the 1960's. Quite apart from its effect on agrarian relations, the green revolution has its draw back. Considering the enormous cost of expenditure, both to the farmers and the state that subsidizes them, and when we consider the high ratio between energy now invested through inputs and machinery and energy produced in food stuffs, the gains from the green revolution in Thanjavur have so far been relatively unimpressive.

## Changing Agricultural Policy Under Structural Adjustment Programme : Crisis of the Nineties.

Structural adjustment is now come to be recognised as the invisible holocaust. SAP is the name given to a set of 'free market' economic policies imposed on countries by the World Bank and the IMF as a condition for receiving assistance. SAPs are designed to improve a country's foreign investment climate by a set of reform policies that eliminate trade and investment regulations boost foreign exchange earnings by promoting exports and reduce government spending on social sectors. The typical measures adpoted are currency devaluation, trade liberalisation, privatisation of goverment held enterprises; wage suppression; restrictions on credit etc., creating the illusion that these measures are supposed to put the country on a path to sustainable growth, but in actual have created a net out flow of wealth from the South to the Northern industrialised countries.

In the attempt to bring India into the global economy, the government has instituted far reaching economic reforms. Today TNCs are being invited into India on the assumption that they will cure all economic and social problems. IMF's prescription to India as follows: liberalise imports to modernise industry to make the countrys goods more competitive for international markets (do not protect industries that cannot withstand international competition) deregulate industry internally to allow only competitive firms to survive and speed up the 'exit' of others; devalue currency to make goods cheaper and hence more competitive internationally; raise prices and reduce the subsidy on items such as food, fertilizers and public services to reduce budget defecit, reduce services that earn no profit etc. Foreign capital is offered at a price. That price is paid for by the working people and it has economic as well as cultural and enviromental implications. TNCs are encouraged by the prospect of cheap labour and this is provided by women and children. There is already evidence to show that the governments sectoral policies are highly influenced by the SAP.

*As part of this process we are today witnessing the demands made by the TNCs -Infrastructural facilities which are not so easily available to the locals themselves like land,electricity are to be developed by foreign experts; changes in cultural values like western styles of living through the media, tourism leading to total change in food preferences are some of the transformations taking us over at a fast pace.*

*We are mute witnesses to the changes effected directly and indirectly on the basic forms of livelihoods like agriculture, weaving, fishing and dairying. Linked to this are the environmental fall outs.*

*We are observing the sky rocketing food prices, due to SAP mandated reductions in food subsidises. The linkages between economic outcomes and health and nutritional status are difficult to measure and pin down with precision. It is an established fact that women carry a disproportionate share of the misery. At one end of the spectrum we have women who are producers of food in its different stages and the other end is the export sector threatening to suck the resources within the reach of the woman. Slashing of jobs and wages has forced women to enter into extremely low wages and under subminimal conditions in order to ensure the survival of their families.*

*It is not just an irony of fate that the GATT negotiations have been timed together with the SAP. India was one of the 108 signatories to the GATT in 1948 and currently the eighth round of negotiations have concluded. Under the present circumstances it is much more difficult to get out of the terms of the Free-trade policies of GATT than that of the SAP initiated by WB and IMF. Free trade is proposed freedom for TNCs while denying the rights of the agricultural population especially women. Changes in the agricultural technologies and turn around to agribusiness in USA and Europe by 1980 called for more than a third of the agricultural production in these countries to be exported. Along with this the attempt for self reliance and rising debt burden in the developing countries, did not keep pace with the demand for the surplus from the developed countries. This led to trade wars between these two blocks.*

*It is in this context that the subject of Free trade in agricultural was included in the latest round of GATT negotiations, gunning for the internal domestic policies in agriculture. What are the impacts of the negotiations for a country like India where more than 70% of the population are agriculture based and more than 80% of the economically active women are engaged in agriculture ? There are several interesting studies that have established the fact that women's works is more than of men and farm animals combined ! Women are engaged in multivarious activities like weeding, transplanting, transporting organic manure, saving the seed, sowing, harvesting and threshing.*

The models of production introduced by TNCs in agriculture necessitate the displacement of small farmers. For example in America where farm debt rose from 120$ billion in the early 1970s to 225$ billion in the early 80s. Since 1981, 6 lakh farmers have been driven off their land.

Women's work and livelihoods for survival are dependant on subsistence agriculture. Through the so called "free trade" all opportunities of livelihood are removed and ensues in the displacement of the small farmer. While men migrate to the urban areas in search of jobs, women have to work very hard to sustain themselves and their children.

Agriculture policy that is geared towards export at all costs and MNC involvement in agribusiness seed production through hybridization have their own consequences for the poor and especially women. Attempts at turning agriculture into a lucarative enterpise has automatically set in the process of destroying the survival mechanisms for women. Food security ensured through the diverse biological wealth that was available to them in times of need has been replaced by monoculture and cashcrops.

It is also pointed out that high female participation in agriculture wage work can be an indicator of the prevelance of poverty. Wage employment and labour force participation can act as a double edged weapon, while putting the income into the hands of women, it also adds to the double burden of caring for the family and earning for their bread. It is contradiction in reality where women are being displaced from their subsistence economies through mechanisation and use of chemicals while women are being considered as cheap labour for MNCs.

The latest in the assault on the poor and particularly women who are the custodians of the family food basket is the boost given to food processing industry which churns out the ready to eat foods by taking away the raw material accessible to the poor and returning it back to them with value added and rendering it beyond their purchasing capacity. For example Britania's rural segment contributes 80% of their market.

The consequences of these various processes are reflected in the deteriorating health status of women. It is no new knowledge that the increasing burden women are measured by indicators like maternal mortality which is 418/100,000 over 60,000 women die due to induced abortions, 70% of pregnant women are anaemic and over 20% of maternal mortality is due to anaemia. We can thus go on enumerating the very disheartening health status of the poor and especially the women without making the connections with the underlying causes.

The most important of one such causes is, the condition under the GATT negotiations, that under no circumstances can export crops be stopped even at the cost of depriving the essential food to the people of our country. The trend towards export crop are floriculture, horticulture and many of the monoculture introduced for exports. They are largely based on mechanised large farms that hav displaced the subsistences economy of the local populations and the burnt of the problem is born by women. The export crops - together with mechanisation are also water intensive.

It is known that only 10% of our rural populations have access to clean water and 80% of the health problem are water related. Here again, women trek long distances to fetch water and it is at the cost of their energy and health needs that precious ground water is diverted. For example, for purposes of growing mulberry for production of silk for exports. It is the same situation as collection of fuel, when women trek for water, they have very little for their own personal use to prevent gynacological diseases.

The undue emphasis given to export of food in various forms is having its adverse impact on the availability and price of some staple and nutritious foods. Thus while it creates poverty and malnutrition amongst the vulnerable groups, the efforts to solve it are through various palliative measures chief among them being food aid.

It is at this juncture that "Navdanya" a movement of initiated for conservation of Genetic Resources Linked to Agricultural crop diversity has foused on bringing awareness to the producer and consumer the important of sustainable agriculture and food security.

**Genetic Resource Conservation : Beyond Germplasm Bank**

Primary causes of the threat to diversity :

Large scale destruction of the genetic diversity is caused due to two kinds of internationally financed mega projects. Habitat destruction caused by building of dams and highways and mining operations. The second is caused by homogeneity in forestry, agriculture, fisheries and animal husbandry.

The spread of monocultures of fast 'growing' species in forestry and 'high yielding varieties' in agriculture has been justified on grounds of productivity.

Biological diversity is vulnerable, and left unprotected it tends to erode. Besides modern agricultural techniques add to the problem. To be profitable different set of criteria are used to add value to the plant wealth.

For example modern farmers do not want variety. They demand high productivity and hardiness, and plants that produce fruits and vegetables that will stand up to machine picking, long distance shipping and long term storage. All of this is ensured by hybridization.

The same scientists who seek out the pest resistant or drought resistant characterestics in the indigenous plants to be exploited, do not think it necessary to conserve the plant in its natural ecosystem.

For example a perfectly good, sturdy fast growing variety of tomato that lacks resistance to attack by a certain insect according to scientists might benefit from being crossed with a less productive but that which stands up well against the pest. According to the scientists the germplasm bank is the only way to safe keeping of the germ plasm. What were the world events that lead to the setting up of the high tech seed banks ?

The Irish potato famine of the 1840s : The Irish had come to depend upon a few varieties of a species imported into Europe from the Andes by the Spanish explorers in the 16th century. The Mexican blight that swept through Europe wiped them out. The potatoes rotted and more than 2 millions starved.

American Agriculture came close to setback in 1970. That was the year a fungus, Bipolaris maydis the southern cornleaf blight swept through Florida across the southeast and into the plains leaving in its wake, hundreds of thousands of hectares of dead and drying corn. It was concluded by the NAS that Bipolaris maydis was the gift of the new technology devised to improve American Agriculture. The seed companies had bred a common genetic trait into hybrid corn easy to plant, harvest and process along with it also increased the susceptibility of the corn to the fungus. "The key lesson" the NAS report warned, "is that genetic uniformity is the basis of vulnerability to epedemics".

Thousands of different rices in Asia uniquely suited to the areas in which they are grown illustrate the inherent value of diversity. But the large scale introduction of monocultures in the third world through Green Revolution was spearheaded by the International Center for Wheat and Maize Improvement (CIMMYT) in Mexico and IRRI in the Philipines controlled by the consultative group of International Agricultural Research which was launched by the World Bank in 1970.

The risks of breeding towards uniformity led to the emergence of gene banks. Along with the research institutes the CGIAR system also ran the International Bureau for plant Genetic Resources for collection and conservation of genetic resources.

Some where along the line the role of IBPGR emerged as a conduit for transfer of resources from the south to the north. While most genetic diversity lies in the south, of the 127 base collections of IBPGR 81 are in the industrialised countries and 29 are in the CGIAR system which is controlled by the governments and corporations of the Industrialised Countries in the North. Only 17 are in the national collections of the Third World countries. Of the 81 base collections in the north 10 are in the hands of the countries that fund IBPGR.

While these exsitu gene banks collect biodiversity from farmers fields, they do not make diversity available to farmers. This erosion of biodiversity makes agriculture vulnerable and non-sustainable. It also excludes the farmer from playing the critical role of conserver of genetic diversity and innovator in the utilisation and development of biodiversity.

Navdanya programme aims at widening the conservation base to include farmers - the primary custodians of biodiversity.

## Exsitu vs. Insitu Conservation.

While efforts at ex-situ conservation of genetic resources in high tech centralised gene banks have been commendable at the national and international levels, conservation at the farmers level has so far had inadequate attention. Biodiversity conservation at the farmer level differs from the ex-situ conservation measures in two fundamental ways. The former is based on horizontal networking, the later on a vertical flow. Farmers conservation involves a two-way flow of biodiversity while ex-situ conservation involves the flow of biodiversity from farmers to gene banks. Conserving biodiversity at the farmer level is necessary for the following reasons :

Ecological

1. Farm biodiversity acts as an insurance against pests and disease. Cropping patterns based on diverse mixtures ofcrops reduce vulnerability to disease and pests. Genetic variation in crops also reduces such risks.

2. Farm biodiversity acts as an insurance against drought and climatic change. Agricultural change in the"Green Revolution" paradigm has been based on intensive use of water, and frequent and accurately timed water inputs through irrigation. In periods of drought and climatic change, such varieties have very high failure rates.

On the other hand, races which have evolved under rainfed conditions are well adopted to long periods of water stress and to variation in the climate. In addition, when such varieties are grown in mixtures of as high as nine ("Navdanya") or twelve ("baranaja") crops, the risks of crop failure are further reduced.

This insurance is not a trade-off against productivity because when all crop outputs are included in measurements of yield, mixtures generally have higher yields than monocultures.

**Economic**

3. Recent changes in economic policy have radically changed the economics of "green revolution" varieties based on heavy subsidies for chemical fertilizers.

In 1991, in line with the World Bank's recommendations for a structural adjustment programme, the Government of India agreed to raise fertilizer prices by 30 per cent in order to reduce state expenditure on subsidies. However, after large scale protests across the country, the price was increased by only 10 per cent in 1991. In August 1992, the prices of fertilizers were decontrolled and doubled overnight.

The economic advantages of subsidies for chemical fertilizers therefore are no longer available, and a transition to internal inputs is therefore becoming an imperative.

This has also been recognised in Agenda 21 of the United Nations Conference on Environment and Development. Chapter 14 of Agenda 21 on promoting sustainable agriculture recognises that

> .... increased use of external inputs and development of specialised production and farming systems tend to increase vulnerability to environmental stresses and market fluctuations. There is, therefore, a need to intensify agriculture by diversifying the production systems for maximum efficiency in the utilization of local resources while minimizing environmental and economic risks.

Biodiversity is essential for providing internal inputs of nutrients and pest control agents on the farm. In sustainable agriculture systems, biodiversity conservation must be an essential part of agricultural production.

4. Biodiversity conservation on the farm is also essential for avoiding nutritional deficiencies for rural communities. Many of the crops threatened with extinction are highly nutritious, though they have been devalued in global food markets. In addition, diverse crops available on the farm make for balanced nutrition. The push for monocultures came from the need to supply cheap food to urban consumers. Consumers are now turning conscious of environmental and health aspects of food. They want food that has not been produced in environmentally degrading ways, and they want food that is nutritious. Biodiversity conservation is therefore a nutritional imperative.

### Political

5. Farmers have been the conservors and developers of seed since time immemorial. They have a fundamental right to continue to conserve and utilize the biodiversity they have protected. "Farmer rights" to biodiversity have been recognised by the FAO. Farmers rights, as defined in the text of the International Undertakings on Plant Genetic Resources of the FAO means "rights arising from the past, present and future contributions of farmers in conserving, improving and making available plant genetic resources particularly those in the centres of origin/diversity".

If farmers have to have these rights in the future, their role in conserving biodiversity at the farm level has to be strengthened.

Agenda 21 and the Biodiversity Convention also recognise the need to supplement ex-situ conservation with in-situ conservation efforts. In-situ conservation is critically linked to a strengthening of farmers rights.

6. On farm seed supply and biodiversity conservation is essential not just for farmers rights, but for the security of food supply. The emergence of patents and intellectual property rights in seed and plant material creates new vulnerabilities and risks for the Third World which is the source of most biodiversity.

Conservation of biodiversity and crop varieties in-situ on farmers fields is a security imperative in the context of the North/South conflict over genetic resources. Governments of the South can only be strengthened by strengthening farmers rights within their own countries to conserve and utilise biodiversity in agriculture.

### Building a people's Movement for Conservation

Conservation of biodiversity with people's participation is essential, both for ecological and economic reasons. Ecologically, diversity is of value in itself, and contributes to resilience against pests, disease and environmental stress. Economically, farm biodiversity contributes to the supply of internal inputs which reduce environmental and financial costs related to the use of external inputs. It also contributes to higher nutritional benefits for rural and urban consumers.

Conservation of biodiversity at the farmer level also builds on farmers rights and farmers knowledge, and is therefore a democratic imperative.

*Navdanya is an initiative to build a network of in-situ biodiversity conservation programmes based on people's participation. Popular participation is Navdanya's organisational philosophy. Conservation of diversity at multiple levels is our ecological philosophy.*

*For us biodiversity is not merely the genetic components of diverse species, but the relationships among the plants, animals, microorganisms, soil and water, which give rise to diverse systems ecologically and culturally. Organisms are not merely characterized by their genotype (the sum of all inherited traits characterized by genes), but also by their phenotype (all the traits which become visible in the life of an individual organis, as a result of the interaction between inherited traits and the environment).*

*We define biodiversity in agriculture at 4 levles :*

1. *Ecosystem diversity*
2. *Farming system diversity*
3. *Species diversity*
4. *Varietal or genetic diversity*

*India is a large country with high diversity in ecosystems. Ecosystem diversity leads to diverse farming systems - different ways in which land, water and biodiversity are managed, and different linkages between livestock, trees and crops. Farming systems are built on the distinctive knowledge of ecosystems and biodiversity that farming communities have, as well as on the conservation strategies these communities have evolved to ensure sustainable utilisation of natural resources. The continued existence of species diversity and varietal diversity within species that is still found inspite of all the threats of erosion is a result of the cultural practices and knowledge systems of millions of unknown and invisible farmers.*

*Keeping this multiple level diversity in mind, in the first phase, three conservation centres were set up to cover three diverse ecosystems :*

1. *The Garhwal Himalaya*
2. *The Deccan*
3. *The Western Ghats*

The Garhwal Himalaya is a mountain ecosystem and climatically has a temperate climate and the crops that are of high nutritional and ecological value and adapted to local environmental conditions are being rapidly displaced. Crop varieties and cropping patterns are highly diverse due to the ecological diversity typical of mountain ecosystems.

The Deccan region lies in the semi arid tropics. It is drought prone, and the farming strategy is determined by the need to reduce environmental risks. A major means for drought resistance has been selection of drought resistant strains and cropping patterns based on mixtures and rotations of millets, rice, pulses and oilseeds.

The Western Ghats is a mountain ecosystem that has a wet tropical climate and is therefore genetically very rich, both in tree species and crop varieties. The region has been under spice cultivation for centuries, and has gardens of pepper, cardamom and arecanut.

Each conservation centre is being developed to perform the following functions :

1. Exploration and documentation of existing biodiversity and causes for its erosion.
2. Collection of different crops and crop varieties and their storage.
3. Selection of varieties on the basis of yield cum resilience.
4. Propogation and multiplication of selected varieties.
5. Evaluation of performance.
6. Demonstration and distribution to local farmers.
7. Facilitating farmers groups and farmers organisations to build a farmers seed supply.

The focus of organising the farmers around the issue of seeds is on improving the seed supply system in the regions covered by the different conservation centres. The underlying implications of such a strategy is to strengthen farmers role as conservors and producers, and to provide for the nutritional needs of the rural population through multicropping - a practice that goes with the native varieties. This apart, the native varieties are drought tolerant, pest resistant and can be relied upon to germinate even after several years.

This project is based on a participatory approach involving farmers groups. The groups are expected to make their decisions, including the type of crops to be grown in each area and the selection of farmers to carry out the studies. The programme focuses on six separate but related components :

1. The exploration and collection of indigenous crops.

2. The cleaning, documentation and infield characterization of the seeds.

3. Seed conservation, both at central and local levels.

4. Varietal improvement and seed multiplication.

5. Infield agronomy trials.

6. Building farmers organizations and communication and net-working.

The farmers in the dry land areas and other fragile ecosystems take a keen interest in the local varieties despite the threat of HYV, so much so that they trace back the history of individual crop variety to their ancestry with utility. Such selected and devoted farmers will be part of the farmers organisations, in building the community seed banks. The farmers who have this inherent and institutional faculty in maintenance and selection of the cultivars will be the mainstay of the networks of farmers organisations.

Each farmers' organisation brings together a small group of farmers, who participate in the collection of crops, and seed conservation and multiplication. Each centre will therefore be in charge of a willing grower, who will have young farmers, assisting in the above processes.

The functions of these centres would be :

1. To maintain the genetic material

2. To educate the young farmers to appreciate the value of the native varieties.

Navdanya is also developing a network of support for other centres working on conservation of indigenous genetic resources such as Navdarshanam near Bangalore and Annapurna in Auroville.

Beyond the conservation centres, the Navdanya programme is also developing links with people's movements which have contributed to stopping the erosion of biodiversity and environmental destruction caused by logging or the spread of monocultures. These include grass roots environmental movements of peasant communities and farmers movements in different states.

In the Garhwal Himalaya, the Chipko movement has played a critical role in reversing deforestation due to logging. Chipko activists are now extending their conservation activity into the domain of seeds and farm biodiversity.

In the Karnataka Deccan, the Karnataka Rajya Ryota Sangha played a significant role in drawing attention to the environmental costs of eucalyptus cultivation in a drought prone region. The Ryota Sangha has adopted farmers self reliance in seed as an important commitment.

In the Western Ghats, the Appiko movement has grown out of protection of rainforests on which local farm communities depend for inputs to agriculture. Activists of the Appiko movement are developing the conservation centre in the Western Ghats.

Besides partnerships with these conservation initiatives, Navdanya is also building partnerships with farmers organisations and movements in other regions to transform the concern for conserving biodiversity into a people's movement. Among the partner organisations which have already initiated the building of farmer run seed conservation and seed supply are the Shetkari Mahila Agadi, the women's wing of the peasant association of Maharastra and Rajasthan Kisan Sanghatan, a peasant organisation working primarily with tribal farmers in Rajasthan. The Karnataka Rajya Ryota Sangha has initiated a campaign on farmers rights to conserve, improve and use their own seeds, without restrictions imposed by multinationsl in the form of patents or intellectual property rights. Farmers in other states will hopefully also take up the conservation of indigenous genetic resources to build ecological and political security through farmers seed supply systems.

Navdanya programme has been functioning as a catalyst to build new linkages at 3 levels.

1. Farmer-farmer linkages

2. Farmer-scientist linkages

3. Farmer-consumer linkages

Building the farmers seed supply systems and movements for farmers rights to biodiversity are examples of the first linkage.

Biodiversity conservation, evaluation and selection of native varieties, and utilisation of biodiversity for internal inputs for sustainable agriculture are examples of collaborations between farmers and scientists.

*Farm level biodiversity cannot be conserved sustainably without the participation of consumers in supporting diversity through their consumption patterns and lifestyles. Building farmer- consumer links is the third support system which Navdanya has initiated.*

### *Navdanya's experience towards transformative learning and people's empowerment*

*To truly empower farmers and advance their human development means to empower from within. It does not however mean that other efforts such as giving them access to resources and technologies are not meant to empower the farmer. Empowering from within means to complement the more external forms of empowerment. It means to awaken the spiritual facilities that slumber within the farmer.*

*Navdanya envisages to achieve this by evocative forms of training. Instead of trainers transferring Knowledge and information as if into an empty cup, the trainer draws out the wisdom that is lying dormant within the vast range of agricultural experience that the farmer has. By doing this the active thinking is awakened within the inner life of the farmers.*

*Active thinking is essential in ecological agriculture. No two agricultural sites are the same. Ecological agriculture is site-specific. The more vulnerable a crop is, the more one has to arrive at an understanding of the underlying principles to create new approaches.*

### *Consumption and Consumer Education.*

*In defining and locating the problem of malnutrition, analysing its causality, and assessing alternative policy responses, we have stumbled on to some practical problems. The efforts to realize fruitful solutions have been of no avail. Practical problems can be listed under two broad categories. Firstly, Nutrition Planning placed a heavy demand on the type of information and modelling that required sophisticated know-how in building linkages (14). Secondly, assumptions and fulfillment of requirements were inconsistent with certain realities and the question of hunger. In the Indian situation nutrition priorities gained importance as a welfare measure rather than as a developmental goal with redistributive justice. As a result, research promoted by palliative goals never went beyond treating nutrition in isolation. Nutrition institutes and cells have remained isolated, powerless and confined to working on a standard set of conventional nutrition interventions and instruments of welfare without taking into consideration other implications. For example, in integrating agricultural research with nutrition priorities there have been efforts to upgrade the protein content of cereals like rice. For millions of people, rice is an important source of food and was considered an important source of protein since it met than 50% of the total protein requirement.*

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*Research was geared to increase protein levels but it was found that protein levels were effected more by environmental factors than by genetic differences, confirming the fact that beyond a point an increase in yield was accompanied by a decrease in protein levels (15). This is a clear example of contemporary science being predominantly reductionist.*

*A review of literature concerned with the social impact of modern food grain technology emerging from international agricultural research shows that it has been impossible to reach a systematic and substantive conclusion regarding the technology's on poverty and nutritional status (16). Time and again, standard nutrition interventions that are claimed to be part and parcel of the much acclaimed primary health care, have recommended food subsidies, nutrition education, and family planning, and are targetted at the malnourished. But Nutrition Planning and Policy did little to take into account the broader social, economic and political implication of the developmental policies that were initiated with the intention of reaching the poor and ended up doing just the opposite. The glaring examples are from the food production systems viz. agriculture, fisheries and dairying. In other words the greatest threat to the people's right to food has come from the food production system itself.*

*When the Green Revolution, conceived in the North was implemented in the South, it displaced indigenous systems of agriculture & food consumption and nutrition patterns. This has been reinforced by relocating the market for agricultural products. Unless there is a reasonable premium on the product, the farmers cannot enter the market, With consumer conscionsuess being a part of Navdanya's transformative education programme growers can establish a direct relationship with the consumers bypassing all the marketing channels.*

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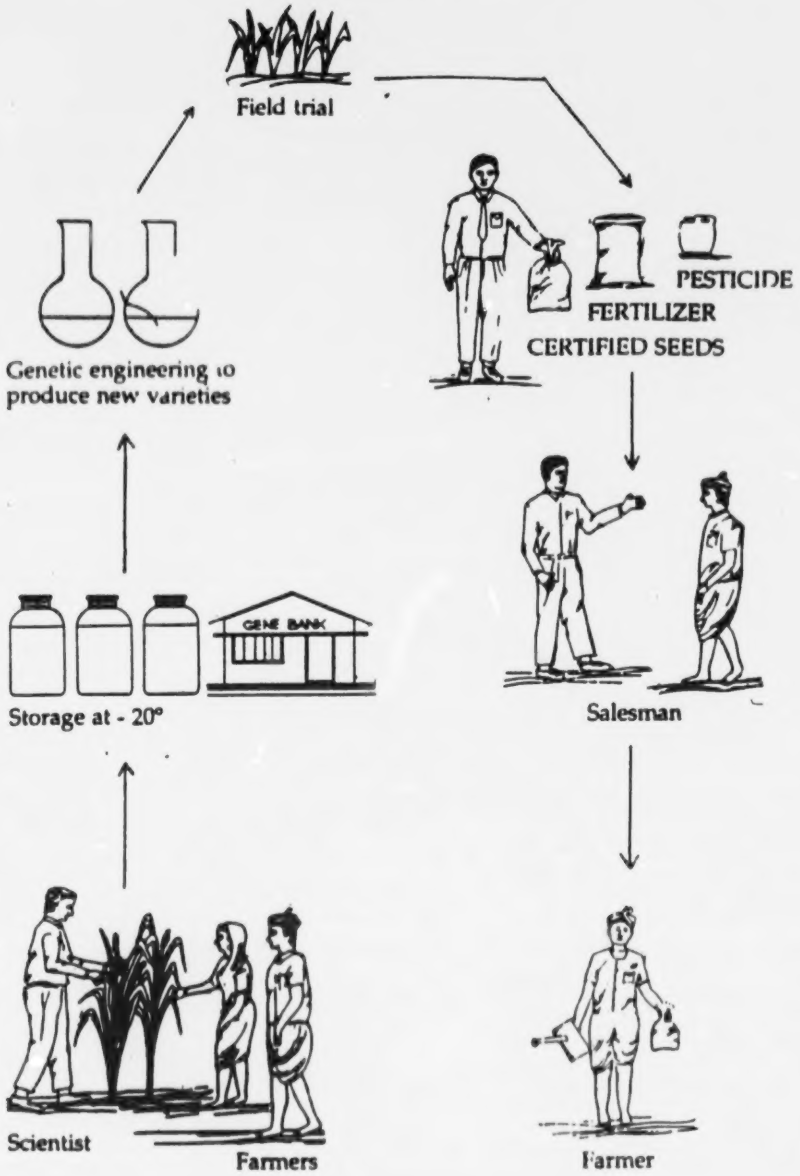
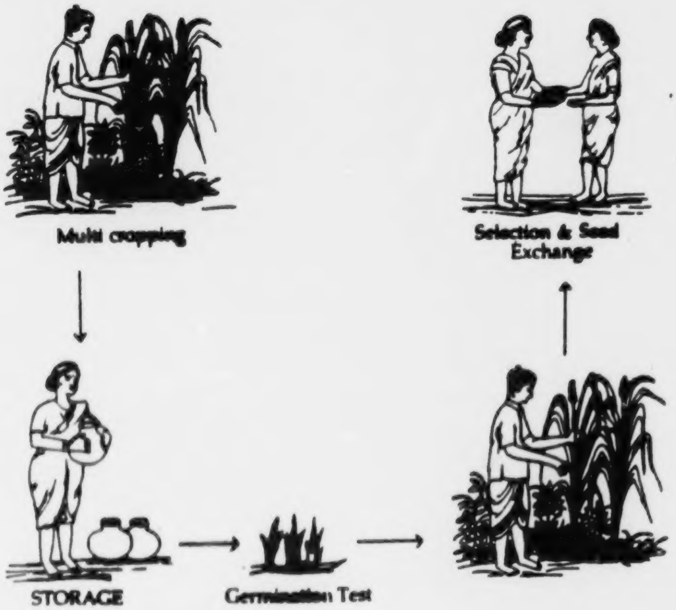
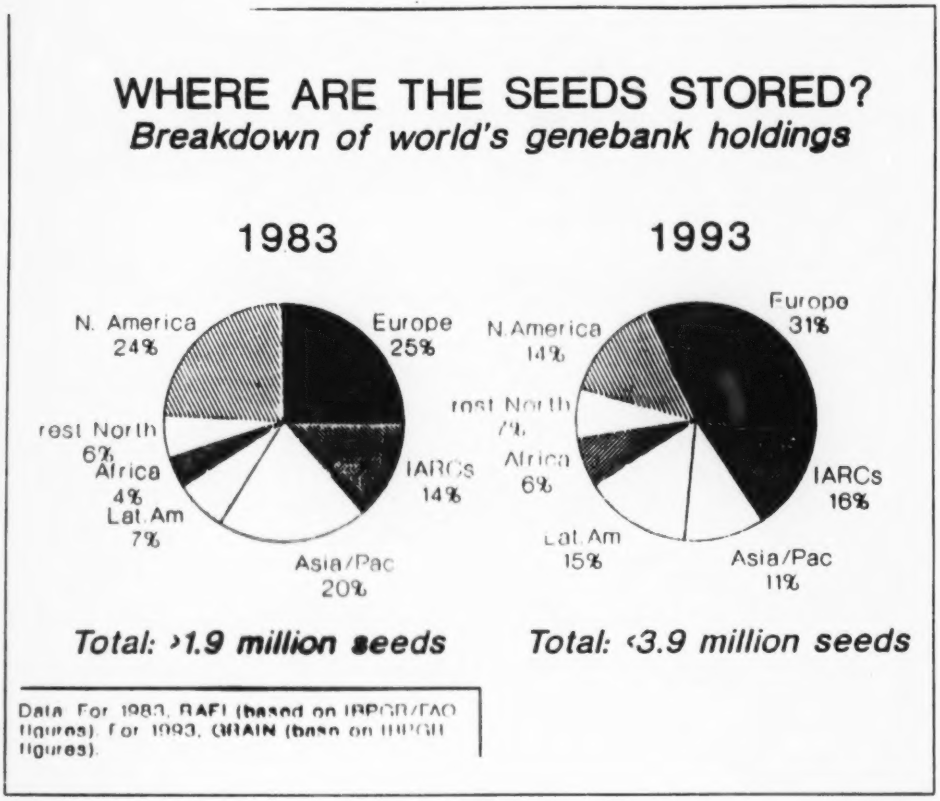
## Ex-situ Conservation


Field trial
PESTICIDE
FERTILIZER
CERTIFIED SEEDS
Genetic engineering to produce new varieties
GENE BANK
Storage at - 20°
Salesman
Scientist
Farmers
Farmer

## In-situ Conservation


Multi cropping
Selection & Seed Exchange
STORAGE
Germination Test



WHERE ARE THE SEEDS STORED?

*Breakdown of world's genebank holdings*

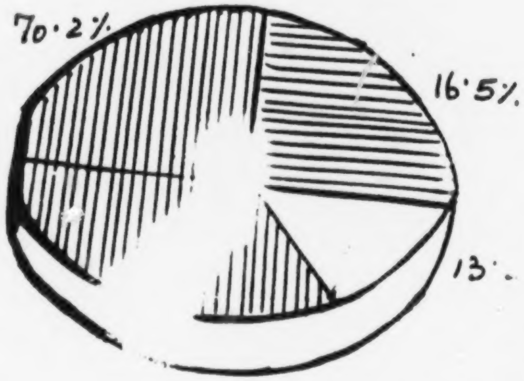
*Total: >1.9 million seeds*

*Total: <3.9 million seeds*

Data: For 1983, **RAFI** (based on IBPGR/FAO figures). For 1993, **GRAIN** (base on IBPGR figures).

3b

# IBPGR Centers across the World.



▥ Under the Control of the Industrialised Countries

▤ Under the CGIAR System.

☐ Under the [illegible] view of the Third World Countries.

3a

| | |
|---|---|
| Ecological | Diversity and nutrient cycling<br>Diversity and insect population<br>Diversity and plant disease<br>Diversity and weed population<br>Diversity and productivity |
| Economic | |
| Political | |

4

## System level

Ecosystem diversity

Farm diversity

Species diversity

Varietal diversity

5.

1. –The location is representative of a stressed area.

   –The farmers fields where traditional practices are followed are selected

   –The size of the insitu plot is left to the beej rakshaks.

   –The material for insitu conservation is the original seed material. The local farmers grew to represent the 'population' structure developed and adapted over the years.

   –For each crop species a member of insitu sites are taken . based on the uniqueness of the area.

The three components on which in-situ conservation is based are

Time, Location and Material.

6.

## Conserving Diversity on The Field

### Some Dilemmas

1. Genetic diversity is vast. What are the limits of each programme?

2. The question of incentives.

3. Organising seed supply between farmers beyond the initial stage

4. Price - support for farmers in the programme

5. Myth of the productivity of new seed variety.

6. Urban needs controlling the production pattern

There is no one model of In -situ Conservation.

7.

# Various Stages of the Seed Conservation

a. Planning

b. Collecting and documentation

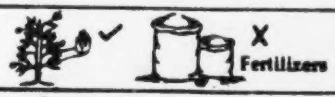
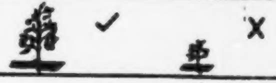
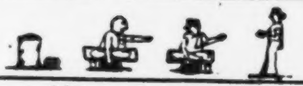
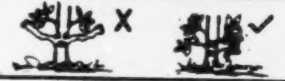
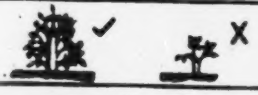
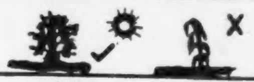
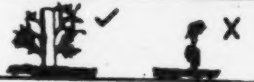
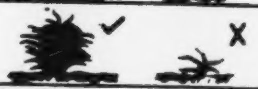
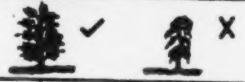
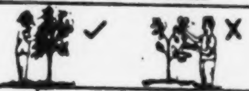
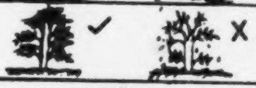
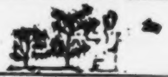
c. Seed treatment and storage

d. Testing for seed viability

e. Evaluation, Characterisation and Multiplication.

f. Utilisation.

## Farmers' Criteria for Selection of Variety.

|  | Criteria for Selection |  | Selected Varieties<br>1 | <br>2 | <br>3 |
|---|---|---|---|---|---|
| 1. | High yield without use of external input |  |  |  |  |
| 2. | Early Maturity |  |  |  |  |
| 3. | Good eating Quality |  |  |  |  |
| 4. | Pest resistant |  | ✓ |  |  |
| 5. | Medium Height |  |  |  |  |
| 6. | Drought Resistant |  |  |  |  |
| 7. | Strong Stems |  |  |  |  |
| 8. | Good tillering Quality |  |  |  |  |
| 9. | Erect Leaves |  |  |  |  |
| 10. | Big Grains |  |  |  |  |
| 11. | Non-Shattering |  |  |  |  |
| 12. | Cost Beneficial |  |  |  |  |
| 13. | Fodder. Value | |  |  |  |

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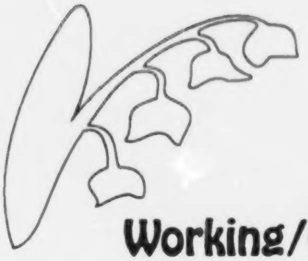

# Working/Conceptual Papers

**The Working/Conceptual Papers**

From the very outset of this project it was decided that there was a need for a forum that gave participants a sense of the ongoing work of this complicated project. The working or conceptual papers served this function admirably. They functioned, at the inception, as working documents which would allow the eventual participants to have a sense of the vision that this project would operate within. The task was to develop a set of working papers which would establish for all of the participants the parameters of the project.

Over the 2-year course of the project, the working papers were updated, revised and discussed. Thus the final papers that are appearing here are the result of learning processes that were an intricate and complex journey of working together by all the participants. Thus the idea of working/learning and educating that we are conveying here in the papers to follow indicates, to some extent, the provisional and emergent nature of the topics that we have tried to address within this project. The papers are therefore not simply parameter markers since they also convey the complex interactions of the participants as the project unfolded.

The working paper by Hall and Sullivan entitled "Transformative Learning: Contexts and Practices" attempted to develop a provisional definitional structure for the diverse facets of this project. The idea of this working paper, at the outset, was to set the broad parameters of this project and to provide case study with a framework that would bring their educative experiences and actions into the broader global context. The paper attempts to develop the context of our present historical moment or juncture as a transformative learning moment. Then the whole idea of what transformative learning is articulated through cultural, socio-political and cultural understanding that is grounded historically. The idea of transformation learning is placed in specific educational contexts such as popular education and then transformation learning is linked to other related concepts such as gender and biodiversity, etc. Finally, there is an initial formulation of the distinguishing characteristics of transformative learning. The paper ends with a number of questions which are part of their own inquiry within the context of this project.

The working paper entitled "Food for Thought and Sustenance" by Leesa Fawcett provides the specific context that this project choose to focus on as a way of studying transformative learning; that context being environmental action through food production, consumption and distribution. This working paper attempts to locate transformative learning within the context of agricultural alternatives to the agribusiness through visioning new poltics and practices, and awakening and rebirthing "sleepy" indigenous and women's knowledge. Her topics range from an analysis of the global agri-business to the numerous and diverse alternatives to modern agribusiness such as organic farming, permaculture to name a few. Fawcett introduces a critical socio-political analysis of some modern agribusiness and outlines some of the contradictions and environmental dangers (e.g. pesiticde reliance and poisioning) is having on the biosphere. The reader is brought into an understanding of the global and bioregional context of agricultural work and there is a sensitivity to issues concerning North-South relations. Fawcett also introduces the idea of `biodiversity' and its importance to sustainable agricultural production. There is a set of assumptions embedded in this paper which takes the maintenance of high biological and cultural biodiversity and the practice of bioregionalism as guides to sustainable and successful food practice.

The working paper `Gender:Transformative Learning and Environmental Action by Darlene Clover is a foray into the location of gender in the context of transformative education, agriculture and popular education. At the outset, Clover does a wide search within a wide global context looking at the role of women in ecological frameworks. The paper shows that women are by far and away the most consistent protectors of the environment all over this globe. But the working paper is not left to survey work She examines feminism and particularly `ecofeminism' and brings the reader up on a vast literature that has emerged in this area in the last several years. Clover examines the role of women in environmental action in popular education contexts. She makes the linkage between popular education and how it relates to the idea of transformative learning. She maps her paper into the working paper of Hall and Sullivan and draws out specific contexts for the concepts that are initially introduced in that working paper. Finally, she ends up her paper by outlining two major attempts in environmental education, one from the North and the other from the South.

Finally, there is the working paper called the `Annotated Bibliography' which was accomplished collectively by several members of the project. This working bibliography was to underscore the incredible amount of emergent literature in this area. It is divided into six parts and proceeds in the following format:

### Part A. Education

- Feminism/Women and Education
- Transformative Learning/Popular Education

### Part B. Environmental Issues

- Women and the Environment
- Ecofeminism
- Action Initiatives

### Part C. International Trends and Practices

- Environmental Politics
- Environment, Policies and Structures
- Women in the Global Arena

### Part D. Environmental Education

- Indigenous Teachings
- Environmental Education
- Women and Environmental Education

### Part E. Food Production, Consumption and Distribution

- Women and Agriculture
- Organic and Sustainable Agriculture

### Part F. Biodiversity

TRANSFORMATIVE LEARNING THROUGH
ENVIRONMENTAL ACTION
RESEARCH PROJECT

# Transformative Learning: Contexts and Practices

by

**Budd Hall and Ed Sullivan**

**Transformative Learning Centre**
**Ontario Institute for Studies in Education**

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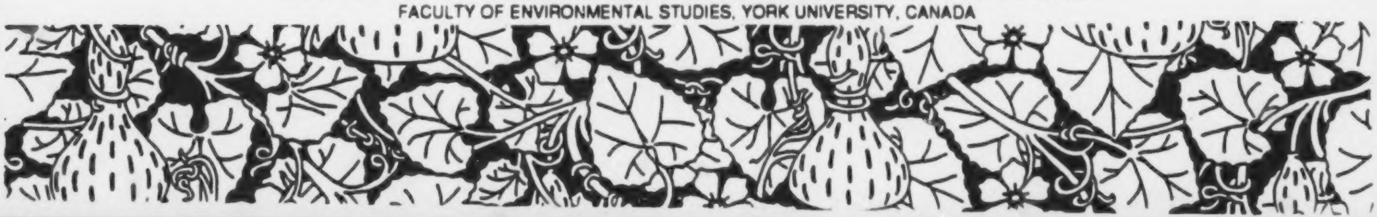

## Working Paper Series

These working papers are an integral part of the Transformative Learning Through Environmental Action Project funded by the International Development Research Centre (IDRC). The papers represent ideas in process.

We invite comments, reactions and suggestions to these papers. These papers are those of the authors and do not necessarily represent the position of the Transformative Learning Centre.

# TRANSFORMATIVE LEARNING: CONTEXTS AND PRACTICES

## A WORKING PAPER

Budd L. Hall and Edmund V. Sullivan
Transformative Learning Centre, OISE

**"Not to know is bad, not to wish to know is worse"**
Nigerian Proverb

**"The grass and the trees are our flesh, the animals are our flesh"**
Susie Tutcho, Fort Franklin, Northwest Territories, Canada

## 1. Background and Purposes

As part of the process involved in undertaking the IDRC sponsored Cemina/York/OISE project on Transformative Education through Environmental Action, it was agreed that a series of initial conceptual papers be developed. This is an initial working paper on the background and conceptual development of transformative learning. It serves both as the starting point for an internal discussion as well as a starting point for an international dialogue. This paper should also be read within the context of the other conceptual working papers which deal with the themes of food and agriculture, women's social knowledge and environmental action, international policy initiatives in transformative adult learning and the environment and selected sources of information for this type of research. This paper is a partial contribution as the richness of alternative perspectives on the nature of the historic moment that we are experiencing may not be possible to fully comprehend and reproduce in textual form. The authors of this paper are both white male academics writing within a Canadian university. And while we have been deeply influenced by a wide variety of non-dominant voices, our own complex class histories, gender, race, and other aspects of location inevitably effect what we write. It is expected that the process of this research project will deepen our understanding of both the theory and practise of transformative education. We seek reactions, suggestions, examples, critiques, additional references, notes on policy implications or other contributions to this work from any and all readers of this paper.

Our initial working description of transformative learning is the following:

The study understands transformative learning as a process of learning, whether formal, non-formal or informal which begins with the daily lived experiences of women and men living in communities and is linked to changing the root causes of environmental destruction or damage. Transformative learning relates personal and structural perspectives and seeks understanding of relationships of power and knowledge. It is also concerned with knowing ourselves as a mammalian species trying to live more lightly, cooperatively and creatively in the biosphere. Learning implies dynamic, life-long processes of discovering and re-discovering what we know about nature, and how we live and teach and learn from one another within our differing environments.

This study focuses on transformative learning within the context of environmental action pertaining to food, land-use and agriculture. Our study is premised on a critique of dominant agri-business, agricultural production with its attendant mono-cultural land use. The critique of this type of agriculture takes into account the environmental costs in varied forms: destruction of landscape, loss of recreation and amenity, erosion of the soil, decrease or extinction of flora and fauna, pollution of people, food, air, soil, and water by pesticides and fertilizers, and the depletion of fossil fuels. These costs reveal the extent to which traditional farming systems produce, in addition to food, a wide range of vital environmental goods. It is only by recognizing and rewarding this that agriculture can begin to move towards sustainability.

This paper reviews the context of our transformative "moment" in cultural, socio-political and ecological times; the role of learning in transitional moments; the educational contexts of transformative learning; the relation of transformative learning to other related concepts; and an initial formulation of the characteristics of transformative learning. We end the paper with a number of questions which are part of own inquiry within the context of this project.

## 2. Transformative Learning: The Historical Moment

The cultural historian Thomas Berry offers an interesting interpretation of our historical moment as a transition between `stories.'[1] In a western context, Berry speaks of the terminal aspects of our industrial western story, which is now wreaking havoc on the carrying capacities of the planet, and a potentially emergent story that will honour the earth as a living context for all life forms. We are living in between these two stories and we will have a responsibility concerning where the stories will lead to in the future. At present we still hear the powerful voices of the industrial story under the rhetoric of the `competitive new world order' of transnational business. In our own Northern context we are beginning to develop a powerful critique of the industrial story from a variety of sources. These sources of an emergent post-industrial story include deep ecology and social ecology groups, human rights groups, ecofeminist critiques and post-development ideas. There is here a convergence of ideas with many voices. Although these voices differ in many ways, they all share with one another a profound criticism of developments of modern industrial culture. We can see this in the work of deep ecology as illustrated in of Devall and Sessions[2], the groundbreaking work of Murray Bookchin in social ecology,[3] the varied critiques and alternative perspectives from such feminist writers as Carolyn Merchant, Vandana Shiva, Maria Mies and Joni Seager,[4] human-rights issues as presented by Greig, Pike and Selby and Mander[5], and post-colonial and post-development discoures.[6] All of the former give us the sense that our times constitutes a transformative moment demanding a learning context that we would identify as `transformative learning.' We do not define learning in the traditional way which is predominantly psychological. Although all learning has psychological components, we nevertheless broaden the base of the definition of learning by embedding it in a broad cultural evolutionary context. Here again the work of Thomas Berry is helpful in our present definition of transformation because he gives us a broad historical and evolutionary context to locate our ideas about `transformative learning.' He names our historical moment the `terminal cenozoic'. [7] He suggests that we need especially to rethink the sequence of events that have taken place during the past few centuries, the period that we have designated as the period par excellence of "industrial progress". During this period we developed our modern educational processes, we withdrew from our intimate relations with the natural world and increased our controls over the normal functioning of the planet. Entrancement with ourselves and our supposed betterment of the human situation did not permit a critical appraisal of just what we were doing in the larger pattern of earthly affairs.[8]

Berry contends that the cenozoic is being terminated by the plundering industrial economy that is considered as the flowering of the fruits of western euro-centric culture. This plundering industrial culture is at present being considered as the glory of the human. As western culture glorifies its achievements over the vast regions of our planet, we are also aware of an immense shadow that it casts on the planet at large. Our supposed higher achievements must now be reexamined and reevaluated in terms of what is happening now to the planet on which we live and on which we depend absolutely for survival. Throughout our post-war history, North Americans were cultured and schooled into an era of consumption of the Earth's resources heretofore unknown in the total history of the Earth. Indeed the very idea of progress in the twentieth century is premised on the idea that moving foreword means learning how to exploit and consume the Earth's resources. We usually call this term `development' and label peoples and countries who have not entered into the ethos of exploitation and consumption `underdeveloped.' We have gauged and continue to gauge our success as a culture by the magnitude of our production and consumption patterns. Our main indicator of economic success is the `gross national product'.[9]

Throughout the history of the twentieth century, western culture, specifically in the North American context, has glorified the consumption ethic and have educated people to be successful within it. Our educational system has been fundamentally an apologist for the consumer ethic and has basically taught people to live and succeed within it. We did not become aware until the 1980's that the fallout from our consumer life style was the devastation of the Earth. What is now astounding is that in the post war era, western culture in the context of their economic activity had altered the Earth so dramatically as to threaten the very existence of life on Earth as we know it. Our education did not prepare us for this outcome, in fact it diverted our gaze from it. When speaking above of the `glory of the human' we must understand this to be the glorification of western consumer-industrial culture. Having this historical location it now can be emphasized that the last assertion has profound consequences for all of the major North American and western euro-centric educational institutions.

The task of an education in the present moment has to deal fundamentally in a critical mode as regards our Western cultural values. In spite of the urgent need for a profound reorientation of contemporary Western values, our culture continues to be deeply addicted to the industrial-consumer society. As with all addictions, one finds an escalation in the use of the addictive substance. The continuing flaunting of consumer products presented as the wonderworld of consumption is the one central aspect of the addiction.[10] The continuing escalation of the military bravado in the recent Gulf War is just a blatant illustration of the malignancy of the weapons race and the war while the planet suffers egregiously. The Past President of the United States, George Bush, called the Gulf War and all its devastating consequences as the beginning of the emergence of a `New World Order'. As educators, we must now be prepared to deal critically with the emergence of this new insanity called the `global competitive market place' providing an alternative, transformative educational vision. The task of education for the immediate future is to assist in activating an ethic of planetary sensitivity that will assist us in practising disciplines that protect us from the allurements of our morbid commodity culture. One of the critical educational tasks will be to constantly remind its constituents that we can no longer live in the former era. In the bluntest terms, it is impossible.

Thus to attempt to continue to live within the mode of industrial society of the last century will bring most of the earth community to ruin. We need especially to rethink the sequence of events that have taken place in the western world during the past few centuries, the period that we have designated as the period par excellence of "progress." Suddenly, and without educational forethought, we are becoming aware in the closing decade of the twentieth century of the profound disruption that our Western culture has reaped on the natural world, the extinction of species, the killing off of rainforests, the pollution of the airsphere and the watersphere as well as the landsphere. Finally, within the human species proper, it is that patriarchal based culture that has culturally devastated indigenous peoples all over this planet as well as wreaking violence on women, not only in the West but on a planetary scale. As a result, we have to completely revise our western understanding of what it is to be an inhabitant of the planet Earth, our human story and the western story; for indeed our new situation reveals the true reality of what we have been doing.

Although there is more than a fair share of denial relating to the profound consequences that our planetary ecological crisis poses, we must nevertheless face the reality of the magnitude of the educational challenge at the present moment. All education, up to our present moment, has never countenanced the possibility of planetary destruction. This viability of planetary existence was never an issue for educators because it was not, until the present moment, part of our cultural understanding. This emergent consciousness on the state of the planet has now passed a significant threshold with the opening of the 1990's. We are hopefully passing over the most significant threshold in the entire course of earthly history. We are hopefully passing from a human-centred to an earth-centred sense of reality and value. We now recognized the larger earth community and not the human community, as normative as regards reality and value.[11] We truly must hope that these changes are taking place because it now appears the inner dynamism is rapidly passing out of the industrial-consumer economy. We are groping toward a community of life systems of the planet on the terms of this larger community, not on terms that we establish. We are ever slowly coming to hear the voices of the natural world once again after these long centuries when our autistic confinement within ourselves denied us any ultimate communication with the resplendent world about us.[12]

At this point , it is helpful to ponder one final reflection that Joseph Campbell made toward the end of his life in a plea for an education within planetary dimensions:

> There are certain periods when transformation is quite special and extremely radical. And ours is certainly one of those periods.....early civilizations remained in relative isolation, with a controlled horizon within which people had the same experiences. Now that those horizons are smashed, people of different beliefs and culture are colliding with each other. The transformation is really of the whole of humanity and what it means to be a cultured and world-related human being.....Our social group is humankind....The only in group that's proper for today is the planet, and there's enormous challenge to open up to that; to give not only yourself but your culture to the planetary view.[13]

We are seeing that this transformative historical moment is being appreciated in its scope and magnitude in all parts of our planet. And the devastation should not be shared equally in all parts of the planet. We in the North have made it the habit to locate the worlds global problems in the South and locating the solution for them in the North. For example, in the past, this world has been labelled the `third-world' the `underdeveloped world' the `developing world'. Although the terms `first world' and `second-world' are out of fashion today, it is still possible to speak of the `third-world' as that world that is on the **periphery** of the international economic community. It is those groups of nations which, during the process of establishing the present world order, did not become rich and industrialized. In the context of the North's rhetoric of privilege we have called this world **underdeveloped** because it did not enter into abundance of the developed world. Always within the frame of reference of development and underdeveloped world is the idea that somehow the underdeveloped world of the South lacked the essential motivation and know how to be developed and privileged. Always absent in this discourse is the idea that the development of the North is tied to the systematic underdevelopment of the South. The major source of economic activities between the North and South at present is that the North systematically demands the extraction of vital resources from the south to the North and returns to the South with consumer goods and environmental waste and pollutants from the North.

David Ransom in a recent issue of the New Internationalist gives a very good picture how this works:

> To the free-market economists of the North it all makes perfect sense. Goods come and go as they please, and disposing of Northern toxic waste in the South is cheaper and easier than it is in the `environmentally-conscious North. This is the way the North-South trade usually works-and has worked for the past decade. During this time heavily indebted Southern countries have bee required by the World Bank to follow what are called `structural adjustment' policies. These policies demand exports of any kind in exchange for credit. If you have natural resources like copper or wood, then you must produce more of them and cheaper. Because everyone else is required to do the same thing there is a glut on the world market, your exports get cheaper and cheaper and so you must export more and more.
>
> The net result is that the North gets plentiful raw materials-cheaply-and therefore doesn't have to worry about conservation-while the South is left with torn up forests, polluted rivers, gigantic holes in the ground and an impoverished people living in an almighty mess. All that's new is that the south now has the option of importing toxic wastes as well as exporting raw materials.[14]

It is within this context than critical voices from the South are justifiably suspicious of the use of the term **global**. Vandana Shiva, speaking to issues relating to the upcoming Earth Summit, makes the following caveat:

> The Motto for the North at the UN Earth Summit and other global negotiations seems to be: `What is yours is mine; what is mine is mine.' This lopsided view of a common future is made easier by the idea of the `global'. Through it's global reach the North exists in the South. The South, however; exists only within itself. The South can only exist locally, while only the North exists globally.[15]

This is not the place to go into detail on this issue but only to highlight and anticipate that there are differential educational challenges of transformative learning for different global locations. What we are trying to highlight here is a context and reflection which takes into consideration the location of learning events which begin to take into account the limitations and sustainable possibilities of the natural world.

Throughout the 20th century one can certainly conclude that the progressive-technozoic vision has been allied to the technological order of the contemporary nation-state and in its most contemporary form the new global competitive market place of the multinational corporations. Within this venue we see the learning as the preparation for this new industrial economic order. Here the jargon goes something like `the learning must prepare new learners to be competitive in the new global economic community.' No questions are asked here on the planetary sustainability of this direction on our natural world. This position accepts uncritically the demands of the global market on competition and consumption. The attitude toward the natural world is fundamentally *exploitive.*It appears that our local and national community life must be geared to this global-marketplace. There is no depth of reflection on how pursuit of this global market place may have dramatic negative impact our natural habitat and the biosphere. There seems to be very little emphasis on the development of local community life and the sense that these communities have profound impact on the quality of our lives. The idea of the market community has its origins in 19th century thought. The parallels are made in the following observation of Holland and Henriot:

> The ideal of a well-balanced society in the nineteenth- and twentieth-century Europe and North America was a "market" environment with in which unrelated parts interacted competitively through "free enterprise" (economics),liberal democracy (politics), and "free thought" culture.[16]

Because of its enmeshment within the `terminal cenozoic dream' the vision of the world marketplace ignores the impact that this pursuit has on the environment and the exigencies of our natural habitat. In short, pursuit of the competitive market place must now be seen as antithetical to a viable habitat; an insult to the natural world. Local community life within this world economic community is not an end in itself but only a means to an end. That is why along with the growth of this global economic marketplace there has been corresponding destruction to community life lived at local levels.[17] The wonderworld of this competitive global community is becoming the wasteworld of the local community.

## 3. The Need to Chose Between Visions: Transformation as the Process of Moving Between Visions

It is the fundamental educational task of our times to make the choice for a sustainable global-planetary habitat of interdependent life forms over and against the pathos of the global competitive market place. This choice for an ecozoic perspective will also be referred to as a **transformative** perspective because it posits a radical restructuring of all current educational directions. To move toward a global planetary education it is necessary to have a functional cosmology that is in line with the vision of where this education will be taking us. We are at another vast turning point and we are in need of a much wider context than the global market place which can carry the weight of the ecozoic era into which we are moving. We are now living in a watershed period comparable, if not even more dramatic than the major shift that took place from the medieval into the modern world. We are in a transition from the modernism that we have described in this chapter to a postmodern worldview whose characteristics we only vaguely see at this point. We are calling this postmodern perspective the ecozoic period. The educational framework appropriate for this movement must be visionary and transformative and clearly must go beyond our conventional educational outlooks that we have cultivated for several centuries.

Contemporary education in all Western societies lacks a comprehensive vision and it is our position that we are in need of something akin to what Thomas Berry calls a `functional cosmology.' From our perspective, a cosmological sense is driven by a desire to have an integrated sense of the whole. When contemporary education and learning has drawn from the sciences they have directed their attention to the social sciences. In most cases, educational theory and practice has drawn from the sciences of psychology, sociology and to a lesser extent anthropology. What is totally lacking is a comprehensive and integrated perspective that was in the past identified as a cosmological perspective. Thus contemporary educational theory and practice carries with it the same blinders that have plagued modern scientific specialization coming out of the post-Newtonian period. To be sure, modern western education has attempted to identify itself with humanism but it has done so without providing a renewal of an acceptable cosmology. What we are working toward an articulation and presentation of a cosmology that can be functionally effective in providing a basis for an educational program that would not continue to judge its efficacy in its support for the present industrial- technological society that we have identified as the terminal cenozoic.

Not only the human, but even more so, the functioning of the entire planet is being altered. The climate, the chemistry of the atmosphere, the water and the soil, our relation to the sun, all the biosystems of the planet, even the geological structure of the planet: all these are being altered in the most extensive transformation that has taken place on the planet earth since the last 65 million years. So extensive is the dissolution of the life systems of the earth during the past century that the viability of the human cannot be taken for granted.

Our long-term survival depends on understanding the depth of what is happening to the planet at present. It is essential to admit that what is occurring is nothing less than biocide. It also depends on rekindling a relationship between the human and the natural world that is far beyond the exploitive relationships of the industrial mode. A different kind of prosperity and progress needs to be understood which embraces the whole life community. All our human institutions, professions, all our programs and activities need to function now in this wider life community context.

It is time to evoke the emergence of a new earth period which can be identified as the Ecozoic era. Even now the shift is beginning to take place in which a relationship of mutual enhancement between humans and the natural world is being regarded not only as possible but essential to planetary survival. How do educators fit in with this momentous change?

Today, educators can assess the forces of industrialism that are currently threatening the viability of our habitat. Now there are growing sections in libraries and bookstores that deal with the multiple aspects of environmental sustainability.

## 4. The Role of Learning in Transitional Periods

When any cultural manifestation is in its florescence, the educational and learning tasks are uncontested and the culture is of one mind about what is ultimately important. There is, during these periods, a kind of optimism and verve that ours is the best of all possible worlds and we should continue what we are doing what we are doing. There is usually a clear sense of purpose about what education and learning should be. There is a predominant feeling that we should continue on in the same manner that we are presently doing. Here one can say that a culture is in `full form' and the form of the culture warrants `continuity'. We might say that a context that has this clear sense of purpose or direction is `formatively appropriate.' A culture is `formatively appropriate` when attempts to replicate itself and in a within this context educational and learning institutions are in syncronisity with the dominant cultural themes.

Even when a culture is `formatively appropriate' there are times that there seems to be a loss of purpose or a loss of the qualities and features that appeared to have given a particular culture it's florescence. Part of the public discourse during times such as these is one of `reform criticism'. Reform criticism is a language that calls a culture to task for its loss of purpose. It is a criticism that calls a culture back to its original heritage. This is a criticism that accepts the underlying heritage of the culture and seeks to put the culture, as it were, `back on track.' `When reform criticism is directed toward educational institutions we call this `educational reform'.

There is another type of criticism that is radically different `reform criticism' because it calls into question the fundamental mythos of the dominant cultural form and indicates that the culture no longer viably maintaining it's continuity and vision. This criticism maintains that the culture is no longer `formatively appropriate'. This form of criticism questions all of the dominant cultures educational visions of continuity. We refer to this type of criticism as `transformative criticism.' In contrast to `reformative criticism', this `transformative criticism' suggests a radical restructuring of the dominant culture and thus a fundamental rupture with the past. We would suggest that `transformative criticism' has three simultaneous moments. The first moment we have already described as its critique of the dominant cultures `formative appropriateness'. The second is a vision of what an alternatives might look like to the dominant form. The third moment povides some concrete indications of the practical exigencies of how a culture will be able to abandon those aspects of its present form that are `formatively inappropriate' and some directions of how it can be part of a process of change that will create a new cultural form that is `formatively appropriate.'

We would say that all of the moments above,in their totality, can be called a `transformative moment.' It is an historical moment of moving between visions. It is not the case that historical moments and their labelling go uncontested. However compelling our understanding of the ecological pathology we currently experience, many would say that we are not at a transitional moment in our present historical situation as we are still maintaining dominant paradigms. Truly, we seem to be living in a time of contested visions. There is incredible cultural hyperactivity directing us toward the `global competitive market place'. Here there is no questioning of the `formative appropriateness' of the dominant vision of the global market place. When there is criticism within these quarters, it is a criticism that is completely at home with the dominant cultural form that seeks a further extension of what has been in place since the beginning of the twentieth century. The educational reform suggested in this venue continue to encourage us to tool up our educational institutions from the nation state market to the transnational market place.

In this paper, we are speaking from a perspective which contests and repudiates the viability of the global market place. We feel that, however glorified, the global market place vision cannot be a viable cultural planetary vision for the future. In essence, we are attempting to pursue a transformative ecozoic vision as an alternative to the `terminal cenozoic.' What will education look like within this vision and what will be the contexts of transformative learning.

## 5. Contexts of Transformative Learning

Where does transformative learning take place? What are the organizational and social contexts within which it can operate? What are the various forms of environmental action within which we might see the enhancement of transformative learning?

The focus of this study is on the role of formal, non-formal and informal learning within contexts of environmental action. More specifically, for purposes of this study, we have focused our work on learning within the context of environmental actions concerned with food, agriculture and related questions of bio-diversity. Some of the contexts include: grass roots campaigns about hunger and food, projects focused on the recovery of indigenous forms of agriculture and the conservation of original genetic stock, women and food security programmes, basic education programmes for both youth and adults, agricultural extension operations, health promotion activities, participatory research projects, community-based non-governmental organizations, river revival projects, rural credit schemes, projects which give visibility and deepen our understanding of indigenous knowledges, social movement networks of women, counter-hegemonic programmes in universities and research institutes, direct action campaigns against producers and businesses, and the continued daily survival of women and men in the poorest parts of the world.

Transformative learning draws on the entire range of learning processes which are the stock and trade of educators working in adult education, community-based literacy, popular education or other social movement locations. From an English-speaking Canadian context, The Arnold et al book on Educating for a Change offers a catalogue of popular education approaches used in educational work, but there are many such books available based on the experiences in other parts of the world.[18] Included among specific approaches are the use of study circles (Nordic countries), the use of photo-novels (Latin America), Popular Theatre (widespread), large scale educational camps (India), the use of drawings for critical analysis (Canada and elsewhere), story-telling (widespread), critical or transformative literacy (St. Lucia), community environmental audits (Uganda), school water testing programmes (widespread), demonstrations and boycotts (widespread), community-based participatory research (widespread), radio-study group campaigns (Tanzania) and many more.

## 6. Related Concepts

We have chosen to work with the words "transformative learning" as the principle way of naming the learning or educational process within the context of this project. We are using this as a label of convenience or an umbrella under which a variety of other concepts might find shelter rather than as a way of displacing or diminishing the specificity other work. In doing so, we are trying to underscore the importance of both transformative moments and transformative processes. We have chosen this way of framing the learning process as it underscores a common element, transformation, that is central to a great many other related concepts. Our understanding of transformative learning draws on a long history of social change oriented formal and non-formal education.

Popular Education[19] is a concept which was used first in France in the late 19'th Century to describe a form of education for the newly created working classes emerging from the transformations related to the rise of the industrial age in Europe. It has been used in Quebec to described social movement oriented adult education since the 'quiet revolution' of the 1960's. But popular education has gained its most visibility from its conceptualization and extensive practise in Latin America from the late 1970's through to the present day. The usage of this concept by social change oriented persons in many parts of Africa, The Caribbean, Asia as well as by community-based groups in the rich countries is very much due to the spread of these ideas from Central and South America.[20]

Popular education is usually described as a community-based or workplace-based process which starts with the daily lived experiences of women and men and through collective processes moves to an understanding of structures of domination or power for the purposes of 'transforming' relations of power and or effecting changes which will directly improve the lives of young people, women and men in their communities.

Popular Education has been characterized by its emphasis on participatory processes, grounding in the experiences of the participants, linking of the local to broader regional, national or global structures and creativity in terms of material development and sharing of new knowledge generation. It has been supported by the dramatic increase during the 1980's of non-governmental organizations which particularly in Latin America have made popular education the 'method of choice'.

International networks such as the International Council for Adult Education have played important roles in disseminating the ideas and practises involved in adult education and research agencies such as the International Development Research Centre (IDRC) have supported a great deal of research and reflection in the field.

Paulo Freire has undeniably had more influence on transformative learning than any other 20'th Century writer. His early formulations of 'conscientization' and 'pedagogy of the oppressed' have been the cornerstones of so many other related concepts such as 'libratory education', 'emancipatory education', and 'education for liberation'. The most recent adaptation of Freirean ideas in North America has been associated with the concept of 'critical pedagogy'.[21] Central to the Freire work is the concept of transformative dialogue between learners as subjects of their own history and teacher/facilitators who together learn to 'read the world' as well as 'reading the word'. Freire more clearly than any other writer has critiqued the idea of a 'neutral' education. All learning and all education, according to Freire either contributes to the maintenance or transformation of existing relations of power and domination. Education is a process which enhances human agency in our societies.

Feminist or women-centred educational theories have also brought new understandings to the nature of power and transformation. In particular feminist popular educators have drawn out the specific ways in which learning is gendered (Walters, 1992; ICAE Women's Programme, 1989). Women's centrality to any discussion of community and family transformations mean that any broader conceptualizing around transformative learning needs to draw extensively from these sources.

Adult education itself is perhaps the broadest category which relates to transformative learning. Adult Education conceptually derives from the British experience of the late 19'th early 20'th century and is historically rooted in notions of providing an education for the working class which is substantially the same or of the same 'quality' as that provided for the wealthy classes. Adult education is most commonly used international concept for an entire range of education provision for women and men who are either no longer in formal school or who never had any schooling at all. And while adult education refers to a broad spectrum of learning opportunities from self-directed learning[22] , critical thinking [23] and organizational learning through continuing education, non-formal education, life-long learning, literacy and many others, the notion of adult learning for social change has arguably been the longest historical stream running throughout the adult education movement over the years. And while environmental adult education is a still largely underdeveloped literature, Matthias Finger, a swiss Professor working in the United States, is one among several scholars who are building these links.[24] Frank Youngman of Botswana develops, for example, in his work the framework for, "a transformative political economy of adult education".[25] Mechtilde Hart has elaborated a concept of 'subsistence knowing' which works with political, feminist and environmental frameworks[26]. Welton of Canada has deepened our understanding of the contribution of Habermas, the relationship of learning to social movement theory and has shown many of us the importance of documenting the history of 'transformative moments' in our work[27]. Foley of Australia has been looking at the impact of global economic restructuring on the possibilities of transformative learning [28].

Global Education, as elaborated by Greig,Selby and Pike refers to an integrative educational process which draws together the complementary, interdependent and mutually illuminating principals of development, environment, human rights and peace education[29]. Global Education is widely used as an umbrella concept in school curriculum reform in Europe, North America and elsewhere in response to the dramatic transformations going on in the world. Many interactive and participatory approaches characterize the global education praxis which contributes most substantially to our understanding of transformative learning. Selby and Pike note that there are five aims of global education and any of the five are not met, then the school is failing in part to address and prepare students. These aims include: systems consciousness, perspective consciousness, health of planet awareness, involvement consciousness and preparedness and process mindedness.[30]

Early roots of transformative learning can also be found in the writings and work of Gandhi-ji[31]. Gandhi's early work in Basic Education and in the elaboration of the practice of Sarvodaya offers much to learn from. Basic education in the original Gandhian sense referred to what we may currently describe as a bio-regional approach to learning in that the focus of skills and training were village-centred and leading towards self-reliance and a de-linking from external market structures. The spinning wheel was the symbol of his educational theory as it represented an ecologically sound principle of closer links with the local production of cotton and other fibres, the meeting of basic needs locally and the teaching of locally specific skills. He

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envisioned a rural India where the intellectual production of rural people would be of a level to counter-balance that of urban national or imperial structures. Further a self-reliant rural India would have an independence of economic and political options that a consumer driven economy could never have. The concept of 'Sarvodaya' (coming to collective consciousness) informs us in similar ways as does the Freire notions of conscientization.

The newest use of the concept of basic education is by the multi-lateral circles of Unicef, the World Bank, Unesco and the United Nations Development Program. Resurrected, elaborated and promulgated by the Education for All process of the late 1980s it the central educational concept in the Jomtien Declaration of Education for All. Basic education in this context refers to basic literacy, numeracy and community-building skills for both young people who have no schools and adults who never went to school either. It is supported conceptually and financially through international funding and policy development structures which have stimulated an extensive variety of 'partnership' and other national planning strategies throughout the poor countries of the world.

An additional contribution to our thinking about transformative learning can be found in the Citizen's Treaty on Environmental Education for Sustainable Societies developed prior to and during the 1990 Earth Summit. The sixteen principles of environmental education for equitable and sustainable societies are important reference points:

1. Education is the right of all; we are all learners and educators.
2. Environmental education, whether formal, non-formal or informal, should be grounded in critical and innovative thinking in any place or time, promoting the transformation and construction of society.
3. Environmental education is both individual and collective. It aims to develop local and global citizenship with respect for self-determination and the sovereignty of nations.
4. Environmental education is not neutral but is value-based. It is an act for social transformation
5. Environmental education must involve a holistic approach and thus an inter-disciplinary focus in the relation between human beings, nature and the universe.
6. Environmental education must stimulate solidarity, equality and respect for

human rights involving democratic strategies and an open climate of cultural interchange.

7. Environmental education should treat critical global issues, their causes and inter-relationships in a systemic approach and within their social and historical contexts. Fundamental issues in relation to development and the environment such as population, health, peace, human rights, democracy, hunger, degradation of flora and fauna, should be perceived in this manner.

8. Environmental education must facilitate equal partnerships in the processes of decision-making at all levels and stages.

9. Environmental education must recover, recognize, respect, reflect and utilize indigenous history and local cultures as well as promote cultural linguistic and ecological diversity. This implies acknowledging the historical perspective of native peoples as a way to change ethnocentric approaches, as well as the encouragement of bilingual education.

10. Environmental education should empower all peoples and promote opportunities for grassroots democratic change and participation. This means that communities must regain control of their own destiny.

11. Environmental education values all different forms of knowledge. Knowledge is diverse, cumulative and socially produced and should not be patented or monopolized.

12. Environmental education must be designed to enable people to manage conflicts in just and humane ways.

13. Environmental education must stimulate dialogue and cooperation among individuals and institutions in order to create new lifestyles which are based on meeting everyones' basic needs regardless of ethnic, gender, age, religious, class, physical or mental differences.

14. Environmental education requires a democratization of the mass media and its commitment to the interests of all sectors of society. Communication is an inalienable right and the mass media must be transformed into one of the main channels of education, not only by disseminating information on an egalitarian basis but also through the exchange of means, values and experiences.

15. Environmental education must integrate knowledge, skills, values, attitudes and actions. It should convert every opportunity into an educational experience for sustainable societies.

16. Education must help develop an ethical awareness of all forms of life with which humans share this planet, respect all life cycles and impose limits on humans' exploitation of other forms of life.[32]

Indigenous approaches to learning are critical sources of inspiration for in spite of the overwhelming destructive powers of western technological advances, the first peoples of the earth still persist and survive. Among the very many sources of understanding of aboriginal learning are is the poem of Arthur Solomon, a Nishnabwe spiritual teacher.

**Education**

The traditional way of education
 was by example and experience
  and by story telling

The first principle involved was total respect
  and acceptance of the one to be taught.
And that learning was a continuous process
  from birth to death.
   It was a total continuity without interruption.
Its nature was like a fountain
  that gives many colours and flavours of water
   and that whoever chose could drink as much or as little
    as they wanted to and whenever they wished.

The teaching strictly adhered
  to the sacredness of life whether of human
   or animals or plants.

But in the course of history there came
  a disruption.
And then education became "compulsory miseducation"
  for another purpose, and the circle
   of life was broken
    and the continuity ended.

It is that continuity which is now taken
   up again in the spiritual rebirth
    of the people.

### 7. Transformative Learning Through Environmental Action

It is not the intention of this project to fully describe at the beginning of the study the detailed characteristics of transformative learning and then to proceed to prove or disprove a hypothesis through the examination of case studies and related literature and practise. It rather the task of the research to provide a context for examining a series of case studies, related literature, ideas from a variety of organizations engaged in environmental action. Based however on the experiences of members of the research team, preliminary scan of the literature and collective reflections generated in the process of formulating the project, a tentative notion about characteristics of transformative learning can be put forward.

1. Transformative learning involves elements of critique, action and creation. It is about transcendence, hope and vision. The effectiveness of environmental learning diminishes if any of these components are missing. Environmental activism is an integral component.

2. Transformative learning encourages collective and social learning as a priority for community change. Such changes incorporate both individual and social learning and specifically address peoples ecological fears and anxiety.

3. Transformative learning materials are based on the language, culture and context of bio-region(s) where the action is intended.

4. Transformative learning provides visibility for indigenous, local solutions and context-specific leadership.

5. Transformative learning enhances understanding of the interconnectedness, the seamless whole of biospheric life which unites local, global, as well as all life forms. It involves specific experiences with nature.

6. Transformative learning is integral not separate from political, economic, cultural, ecological and other aspects of changing power relations.

7. Transformative learning draws strength from the richness and specificity of gender, race, ethnicity, age, ability, sexual orientation and other differences.

8. Transformative learning facilitates the coming together of knowledges of all kinds including spiritual.

## 8. Further Questions

1. What are the characteristics of transformative learning which most closely correspond to community or local visions of sustainable societies or what do community-based notions of sustainable societies imply for transformative learning ?

2. How can the learning dimension of environmental action be strengthened in the context of specific activities?

3. How best are transformative learning materials best structured?

4. What are the roles in supporting transformative learning of various community structures in specific moments of environmental action.

5. What are the different forms which transformative learning takes in large scale environmental actions compared to more local actions?

6. What kinds of educational perspectives, skills and approaches are most helpful to have for work in environmental action projects. work?

7. What are the best ways for NGOs, social movement organizations, supportive global organizations and global networks to support effective transformative learning in the context of environmental action?

8. Who are some of the key organizations and writers/thinkers in the field of transformative learning?

9. What are the best current sources of community accessible information about the practice and policy of transformative learning?

10. How do we know if transformative learning is contributing effectively to a given environmental action?

11. What are the criteria for success in transformative environmental education?

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TRANSFORMATIVE LEARNING THROUGH
ENVIRONMENTAL ACTION

RESEARCH PROJECT

# Gender, Transformative Learning, and Environmental Action

by

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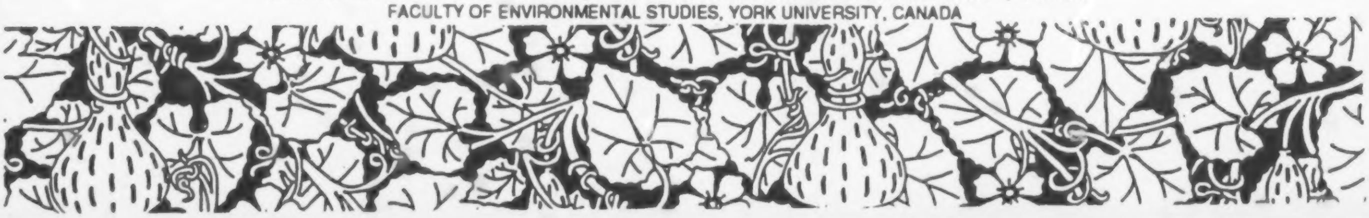

## Working Paper Series

These working papers are an integral part of the Transformative Learning Through Environmental Action Project funded by the International Development Research Centre (IDRC). The papers represent ideas in process.

We invite comments, reactions and suggestions to these papers. These papers are those of the authors and do not necessarily represent the position of the Transformative Learning Centre.

## 1. Introduction

### A. Purpose

> Women must no longer be treated as invitees to the planet, but rather as equals whose strengths, skills and talents need to be utilized and recognized to their full potential.
> Gertrude Mongella, Secretary-General, United Nations
> Fourth World Conference on Women

The purpose of this paper is to identify and analyze the relationship between gender, transformative learning and environmental action. Many women around the world play an active role in the global environmental movement due to their organizing and critical education skills.

Although much literature focuses on what women need, i.e. education and organizing skills, there is still little attention in written materials paid to the fact that many women working in defense of the environmental are already accomplished educators, communicators, organizers, trainers and activists. This lack of focus also means that little attention is paid to the practices, methodologies and materials which women around the world use to empower those involved in environmental action initiatives. This paper critically analyzes the theoretical and practical aspects of popular education, transformative learning and environmental action with, by and for women. This is done by presenting the various elements of women's approaches to education and environmental action; their ways of knowing, working, teaching, communicating, organizing; how they view the world; and the values, principles and theories that motivate their educational and environmental work. In addition, this paper focuses on gender issues and how women incorporate them into their educational work with both women and men to strengthen male/female relationships and the social change struggles in which they are engaged. The four case studies illustrate the coming together of women's education practices in environmental action in the North and the South.[1]

This paper is influenced by the fact that my own primary and secondary schooling, and even to a certain degree my university education, has focused on the conquests, discoveries and initiatives of men, not women. For me, as for many other women, the world has been filtered through male perception. There has also been an absence in literature of any of the other types of popular learning and/or alternative education that I have witnessed around the world. This has been a major source of frustration and I decided that a key focus of my academic work would be to render visible the popular initiatives, knowledge, activities and expertise of women's environmental and educational work.

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[1] Non-industrialized countries will be referred to as the South throughout this paper. Industrialized countries will be referred to as the North.

Women have in fact played vital roles in transforming society, both in the formal and informal sectors, throughout history and are making history through their global environmental actions. This paper is an attempt to show why and how the particular methods, practices, processes, programmes, actions, and tools used by women are transformative should be seen as one viable method to help stop the continued degradation of the human life support system.

## B. Methodology

Environmental popular education practices, organizing and networking of women in the global arena are examined generally through secondary sources and brief case studies and then more specifically through two indepth case studies from Canada and Brazil. Information for the two case studies was acquired through a questionnaire as well as an interview either in person or by telephone. Canada was chosen as a case study because it reflects my own location on the planet and the environmental realities of my own location. Since the UNCED meeting in Rio de Janerio in June, 1992, I have worked very closely with women and environmental groups in both Brazil and El Salvador. Through my connection with women in these countries, I have come to realize the power and strength of women to transform the societies in which they live.

## C. Rationale

The 20th century has seen the rise of two very powerful movements: women and environment. These two movements have created a growing awareness around the world of issues of social justice, the seriousness of the global environmental crisis and the importance of protecting the environment, recreating the living natural heritage which is almost lost and the inter-connection between the two (see Seager 1993; Shiva 1989). This crisis now facing the planet is the product of education, development, economic and structural policies operating at odds with the rhythms of both nature and the majority of the world's people (see Gladwin 1991; Peterson 1992; Shiva 1989). In fact, specific policies such as SAPs and ideologies such as patriarchy have proven to be highly exploitative, oppressive and destructive. Men have defined and dominate local, national and global policies and structures. They have shaped many of the world's attitudes and beliefs, produced value systems, defined knowledge and whose is the most important and worth studying and teaching, and who should receive what knowledge and how. Men are also ultimately in control of the world's environmental fate; a matter which women recognize and have come to challenge more vociferously, openly and frequently as the years progress (see Seager 1993; Shiva 1993; Dankelman 1989; Gaard 1992; Peterson 1992).

Literature shows that around the world, thousands of women are responding to the global environmental crisis by organizing at the grassroots, national and global levels. Further, they are educating for change through popular or non-formal methods inside, but particularly, outside established institutions and structures. Women are mobilizing to stop the continued degradation of the human life support system and using a gender approach to build a more just and equitable society (see Plant 1993; Dankelman 1988; Garland 1989).

The Bruntland report states that education is a critical tool which can improve "the capacity of the people to address environmental...issues" and that "formal and non-formal education are indispensable to changing peoples' attitudes so that they have the capacity to assess and address their own needs and concerns" (Agenda 21: 1992:36.3). Although few would argue with this statement many women around the world recognize that both formal and non-formal education practices and concepts have assisted to create and maintain specific sets of values, behaviours and gender relations which go against the continued survival of the planet and marginalize or render invisible women's contributions and knowledge. Women seek to show that there are different ways of knowing, teaching, organizing and acting in this world. Not only are these different elements cogent and rich but their validation can have a very transforming effect on the way the world operates (see Shiva 1989; Weiler 1988). Various women use critical education and popular education methods and practices such as consensus-building, creating a space for open, fully participatory dialogue which validates and gives voice to those who have been silenced. They use song, dance, theatre, spiritual circles, drawing, workshops, training sessions, networking, non-violent national campaigns, blockades and protests as tools of empowerment. They introduce women's experience, expertise, emotions and understanding of the environment into the larger domain of what constitutes knowledge (Shiva 1989). Their analyses are not the only tools necessary to make sense of and change environmental and social abuse, but they are ones the world cannot do without (Seager 1992).

"Early roots of transformative learning can...be found in the writings and work of Gandhi-ji" who believed learning should be village-centred, de-linked from external market structures and lead towards self-reliance (Hall and Sullivan 1994:20). Further, and most importantly, the teachings of Mahatma Gandhi encompass the notion of using a non-violent approach in civil disobedience actions. Petra Kelly (1990:24-25) notes that few people realize that this non-violent resistance strategy was acknowledged by Gandhi himself "to have been copied from the nineteenth century Indian Women's Movement." This seems to suggest that the early roots of transformative learning are found in the women's movement and the practices which they developed and shared.

Often it is women who suffer more from the effects of environmental degradation, particularly those from the South. It is their responsibility to provide water, fuel, fodder, and meals, as well as health care within their homes and the larger community (Dankelman 1988; Rodda 1992; Sontheimer 1991). National government inadequacies often coupled with international financial policies such as the World Bank and the IMF Structural Adjustment Policies (SAPs) contribute greatly to the disintegration of social and cultural fabrics as well as the natural environment on which women rely so heavily (Gladwin 1991). Moreover, global patriarchal measures ensure that women continue to own little of the world's land, and are "on the whole poorer and less educated than men" in both the North and the South (Kelly 1991:24). Canada itself is feeling the effects of global structural adjustment which has manifested itself in a four-year recession and jobless recovery. The global environmental crisis is viewed as both personal and political.

Because it is both personal and political women have had to become key players in the environmental field on these two levels. The personal level means an understanding of inner strength and expertise, and drawing on this to change their own behaviours and move towards action. This power of personal action vis-a-vis the environment frequently translates into political action which means analysing, challenging and working against the powers in society which appear to be in opposition to a healthy planet (see Shiva 1989; Seager 1993; Peterson 1993). It also means dealing with the challenges of race and class that have manifested themselves within women's organizations and movements.

Many women around the world are working together not just for survival, but for social transformation. Transformation is not necessarily seen as a product, but rather as a process and a learning which must take place. Their environmental work ranges from small scale initiatives such as tree planting, reviving traditional farming practices and foods, water purification, and rescuing forests identified for destruction, to full-scale national and/or global action initiatives which include hunger and poverty campaigns, protests against the loss of biodiversity and nuclear weapons, and old-growth forest protection movements to name but a few. One key element of the educative work is to use a gender approach. This approach makes it absolutely clear that any analysis of global environmental or social issues must include an understanding of gender. In addition, ecofeminism, a theory which brings together the critique, practices and vision of the ecology and feminist or women's movements, has also become a motivating force and way of defining their own space in the world.

Joni Seager (1993), a Canadian feminist/environmentalist, has found through research that women are the mainstay of the vast majority of environmental groups and movements around the world. But their knowledge, skills, approaches and critical roles are still consistently marginalized and undervalued. She has ironically crowned these passionate environmental activists "hysterical housewives, treehuggers, and other mad women" (pg. 253). However, a large number of women have become adept educators, communicators, organizers and activists. They are found at the forefront of environmental initiatives and their experiences, knowledge and ways of educating can be a liberalizing force for men, women and the non-human elements of the earth. For many of the world's women, their daily lives have given them privileged access to survival expertise and their passionate commitment is integral to the survival of the planet (Shiva 1989).

## 2. Women View the World

> Women on the banks of the Ganges may not be able to calculate an infant mortality rate, but they know all too well the helplessness and agony of holding a child as it dies of diarrhoea.
>
> A. Durning, 1990

According to Kelly (1993:24) "women represent half the global population, over one-third of the labour force and log two-thirds of all working hours." Yet they receive only one-tenth of the world's income and own less than one percent of the world's property. Most of the world's poor and illiterate are women and they constitute more than 90% of the world's refugees. In addition, they have been almost entirely excluded from political processes, and are seldom found in levels of decision-making in the vast majority of government offices, institutions and organizations. Warren (1992:40) concludes that

> Within the household, women participate in decision-making at different levels. Senior women generally control processing of agricultural produce and make household consumption decisions. With the increasing out-migration of men, a growing number of households are de facto female-headed. In such households, day-to-day production decisions are made by women, but men have the final say in long-term decision such as allocating resources or making investment decisions. The majority of women have little or no direct influence in village-level decision-making.

Over the years, worsening economic conditions worldwide and the failure of national governments, most often due to the interference of countries in the North and their World Bank/International Monetary Fund Structural Adjustment Policies (SAPs) (Elson 1992) and/or deficient governance by the upper classes within countries, have induced women around the world (as well as men) to create grassroots, non-governmental and many other types of voluntary and community-based organizations to meet their own needs. Maritza Villavicencio (Kuppers 1994:64) notes that "[f]rom time immemorial, the failure of the Peruvian state to fulfil its social responsibility towards the population has been a characteristic of the ruling classes in whose hands state power has rested." This situation has been the impetus for women to actively create soup kitchens, "Vaso de Leche" (glass of milk) committees and organize large demonstrations as independent organizations. Moreover, rapidly deteriorating environmental conditions over the past few decades have been a catalyst for even more intensive organizing by women at the community, national and global levels in order to protect their families, communities, and environments and the planet as a whole (Fisher 1993). Autonomous women's organizations can be seen as important institutions for them to formulate their own demands (Braidotti et al 1994) and a spring board from which to develop concrete solutions for their particular situations. In addition, they provide a space to discuss gender relationships, global politics, social justice and human rights issues, environmental concerns and the inter-connectedness of all these issues. Through voluntary organizing, women have achieved significant changes within the popular movement as well as to their natural environments.

Environmental action initiatives coming from these at times ad hoc at times clearly defined organizations by women range from practical actions such as tree plantings, reviving traditional agricultural practices and setting-up recycling programmes, to more strategic actions such as organizing major protests, campaigns, blockades and conferences. The numerous networks that have been created have reached out world-wide to help women share their work, concerns, creative strategies and actions with others. Korton (1990) notes that substantial progress is being made due to women and now that "their forces have been released, they will never be reversed" (pg. 7). Women in the South are the primary collectors of food and fuel and are therefore closest to the land. Many have developed skills and knowledge of "natural resource management that can be built upon" (Dankelman 1988:173). Shiva (1989) concludes, women's "daily lives have given them privileged access to survival expertise which could be integral to the survival of the planet" (pg. 224). From this position women's actions and ideas often reflect a very different understanding of the problem which faces the world today (Seager 1993). Many of the world's women who confront and struggle with environmental issues are capable of processing the complexities of the problem even though they may not see themselves as either feminists or environmentalists. The vast majority of women who join the struggle begin with the notion a healthy planet is not a luxury but a fundamental human necessity (DiPerna 1991). Visions which many women share for the future, challenge structures and ideologies now in place, particularly patriarchy, which are moving the world at break-neck speed towards destruction. These same structures and ideologies discriminate against women's full participation within their own societies as well as on national and global levels (Peterson and Runyan, 1993; Peterson, 1992).

Throughout the years a majority of the world's women have been relegated to the margins, their inputs and knowledge virtually ignored, their vast experiences coupled with their teaching and organizing expertise rendered invisible. For example, many women have believe that the development of nuclear energy "results from the need for central control of capitalism, and military" (Lechte 1993:13). Women have been requesting the development of renewable energy sources but these have been disregarded because they "are useless for military and other destructive purposes" (pg. 13). There are many other instances such as these and the result has been a more systematic organizing of women around the world to challenge the powerful systems and groups who hold the collective fate of the earth in their hands.

Over the past two decades, women have become more actively and critically involved in caring for the environment at the grassroots, national, and global levels through management, conservation, demonstrations and education initiatives to name but a few. Their increased participation in the development process has a positive link with the environment. Women have begun to initiate and spearhead environmental actions which are gaining international notoriety and bringing the concern with living and survival back to centre-stage (Mies and Shiva 1993).

## 3. Women's Ways of Knowing, Teaching and Communicating

> ...what we have learned is our most precious asset; the rich diversity of our experiences, understanding and ideologies combined with a growing recognition that we cannot propose a social/political/economic programme for women alone, but that we need to develop one for society, from women's perspectives.
>
> Third World Women's Forum, Kenya, 1985

Orr (1993) states that education can be an effective way to secure change and achieve a more just and sustainable society. To date, insufficient policy attention has been given to the challenge of developing education for sustainability for adults. He believes that much needs to be done to ensure that adults as citizens, consumers, employers, workers and parents are able to develop theoretical and political skills, and acquire the knowledge and awareness which they and our society need to combat the environmental crisis in which we are involved. Joy Palmer believes that it "should be the entitlement of every individual to have education for, from and about the environment....[i]n an ideal situation, there would be immediate and massive expansion of environmental education at all levels, bearing in mind that education is no short-term process and that time is of the essence to the future of our planet (Cooper and Palmer 1992). The Council for Environmental Education has found that to date, environmental education is still widely under-valued, under-resourced and inadequately understood. However, evidence shows that in fact, there is a growing recognition of the critical role that education can play in helping people to understand the gravity of the environmental crisis as well as the ideologies, policies, structures and practices which are at its root.

Our Common Future or the Bruntland Report has placed particular emphasis on the role of formal and non-formal education as critical tools to help people to make personal changes in their own behaviours as well as making more informed decisions and taking direct action on the larger political front. Over the past three decades, adult non-formal or popular education has become a method of teaching and learning which has helped to change peoples' attitudes and behaviours, and provide them with the capacity to assess and address their own needs and concerns in order to become effective participants in the struggle for change (Arnold and Burke 1983). Adult Popular Education began as a concept in France in the late 19th century to describe a form of education for the newly created working classes (the majority of whom were men) emerging from the transformations related to the rise of the industrial age. It is most recently associated with work in Latin America, specifically the work of Paulo Freire. Popular education has to do with physical location and has become the 'label of choice' for a large number of community and adult educators in Africa, Asia, the Caribbean as well as Europe and North America. Often referred to in other parts of the world, such as Asia, as adult non-formal education, popular education refers to a process of learning which begins with the concrete experiences of the learner, aiming to develop a critical awareness among oppressed groups about their situation and what they can do to improve it. It is often described as a community-based or workplace-based process which starts with the daily lived experiences of people and, through collective processes, moves to an understanding of structures of domination or power for the purposes of transforming these relations of power (Arnold and Burke 1983). Popular education is political in its intent and has as its goal, structural change. It is also an attempt to work and teach in inclusive not exclusive ways (Nuñez 1985; Reed 1981, however, the majority of educational practices, both popular or non-formal and institutionalized, around the world have been exclusive and male-dominated, not inclusive and gender sensitive (Rosero 1988; Ba 1993).

Through their work as educators and teachers, women have challenged male-dominated traditional forms of education (Weiler 1988) and use their own methods and practices sensitive to gender, to give voice to women's needs and concerns which have been systematically ignored. Since the feminist movement in the 1960s, woman have been challenging the "absence of women in history textbooks, the ways in which women have been portrayed in children's literature and the ways in which girls have been led into certain areas of the curriculum and away from others" (Weiler 1988:1). Although they are still in the process of developing a feminist pedagogy, women teachers "have created courses addressing women and history, psychology, literature and other disciplines and have sought less authoritarian relationships in classrooms" (pg. 1). Only recently have women begun to challenge popular education definitions and practices which do not address the needs and concerns of women (Yanz 1987) and even more recently, the environment. In many parts of the world, they are using these new techniques of popular education to address gender inequalities and environmental degradation.

### A. Feminist Popular Education and Transformative Learning

> For those of us working from the perspective of popular education among women, it is a challenge to develop a new perspective on action and reflection that incorporates the contributions of...feminism, as well as those of popular education.
>
> Rocio Rosero, 1986

> ...most women and especially poor women have great endurance, courage and resourcefulness, qualities which have enabled them to cope with the harshness of their lives and to survive with dignity. This strength of character if articulated can ba a powerful force for change - both for societal change as well as for changing the perceptions of the women themselves.
>
> Report of the International Feminist Workshop, 1980

In order to understand changes which are taking place in the field of popular education one must look at how and why women are challenging and moulding its practices to suit their needs (CEAAL 1987). It is also important to understand that since popular education practices and initiatives can be encompassed under transformative learning, popular education must be examined in terms of its strengths and weaknesses in order to assess its potential as transformative learning. Transformative Learning is an umbrella term used to refer to a wide variety of action-oriented educational processes which begin with the daily lived experiences of women and men living in communities and which have as their goals: learning ways to understand and challenge the processes and functions as well as structures which are responsible for particular social inequalities and environmental threats. Transformative learning means that personal values begin to change as a result of a new understanding, people begin to view the world differently and therefore, the actions in which they are involved, be they peace, environmental or social change initiatives, take on new meaning. Transformative learning is an attempt to conceptualize a more inclusive educational process which describes the practice by which individuals within their social locations join together with each other and others in order to take action. It aims to strengthen their behaviours and attitudes so they can be more confident and take a leading role in formulating strategies that challenge oppressive situations and structures. Therefore, it involves a high degree of participation, recognizes mutual learning, stresses the creation of new knowledge and is directed towards social, economic or other forms of justice and democracy. It draws on the entire range of learning processes which are the stock and trade of educators working in adult education, community-based literacy, popular education, environmental and/or other social movement initiatives. Transformative learning is a label of convenience or an umbrella under which a variety of other concepts might find shelter. This type of learning can be a catalyst in working towards a global paradigm shift and redefining and reexamining values[2].

Many women believe in, and work with, the basic principles of popular education. This principle is that adults can transform themselves and their lives through education and that all adults have complex experiences and a base of knowledge which is integral to the learning process (Freire 1972; Arnold and Burke 1983). However, women's experience within popular education has not been problem free (Ba 1993; Rosero 1988). Although popular eduction has always defined itself as a process of liberation, it too has tended to reinforce oppressive gender stereotypes (Yanz 1987). Popular education "broadly targets the oppressed and exploited but does not deal with the specifics of women's oppression" (Ba 1993:9). Since popular education does not deal with gender contradictions and has grown out of popular movements which carry androcentric bias many women educators around the world tend to view it with reservation (Viezzer 1986). The development of feminist popular education arose from the contradictions that have existed between women's experiences, perceptions and knowledge and the more andropocentric forms of popular education (Rosero 1986). Paulo Freire's Pedagogy of the Oppressed (1972), "appears to take androcentricity as the norm. Therefore, gendered popular education needs to do the work for women that he did for men" (Duellli Klein 1983:102). By working to incorporate women's knowledge base and experiences into the learning process, it is hoped that women will become equals within the process (Rocero 1986). Feminist popular education is a process of "conscientización", a term developed by Paulo Freire to signify the process in which people are not recipients but knowing subjects who achieve a deeper awareness of the socio-cultural reality that shapes their lives and their own ability to transform their reality (Freire 1972). A key component of this type of education is to seek to transform people by including the daily reality and experiences of women.

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[2] This definition comes for the working paper "Transformative Education" by Hall and Sullivan for the "Transformative Learning Through Environmental Action" research project

Feminist popular education seeks to go beyond the class-centred views of popular education by bringing a gender analysis and approach to all forms of popular education and showing how and why this is so essential to an integrated and more transformative way of learning. Gender does not refer to women alone but rather is a social construction of the place of men and women in society and the roles they are expected to play. Pietila and Vickers (1990:38) argue that:

> A focus on gender does not proceed merely from a concern with inequalities between men and women, but on the recognition of differences between men and women in relation to household division of labour, access to and control over production resources and assets, and stakes and incentives.

A gender approach is an analysis of the roles of men and women in society. It provides a way of looking at the lives of both women and men in a particular society and considers the totality of social, economic, and political life in learning what the forces are that shape society in general and, in particular, inhibit women from becoming full partners with men in decisions which affect their lives. It focuses on the relationship between women and men and society and nature, acknowledging that women generally have disadvantaged and subordinate positions that prevent their full participation as both decision-makers and full beneficiaries in the world in which they live. Moreover, it recognizes that men in general have access to the three very important areas of power: economic, political and educational. An approach adequate to women's needs requires not simply to make women visible and call for resources to be directed to women, but also an analysis of how male privilege and power over women can be reduced. The needs of women for resources of their own to discharge their household duties or practical needs, cannot be adequately met without some reduction of women's dependence on men and some move toward greater gender equality in control of resources and political needs. Thus, a gender approach does not neglect women's practical needs of home and family and focus only on women's strategic needs of access to resources and decision-making. Rather it begins from the immediate needs that women themselves express and analyzes the interconnection between those needs and strategic gender needs. The needs of poor women for more resources of their own cannot be adequately campaigned for only in terms of demands for equality (Elson 1992).

Analysing gender involves analysing the role of patriarchy and the deep-rootedness of women's subordination in society. Using a gender analysis or approach is a way to help women and men to understand the critical role which patriarchy has played since the beginning of time to oppress both women and the natural world (Shiva 1989). It is about having power over, dominating, taking and controlling. Many people around feel that real social transformation will not take place unless patriarchy, in addition to other oppressive practices such as capitalism, SAPs, etc. are challenged and changed (Gladwin 1991; Shiva 1989).

Professor Shirley Walters of South Africa states that "feminist popular education has a strong political, mobilizing and empowering connotation" (see Ba 1993:9). There is a strong emphasis on supporting personal development while promoting political action to challenge oppressive structures. Feminist popular education begins with daily experiences of oppression as experienced by women in order to develop a politics that takes into account the multiplicity of oppression such as gender, race, capitalism, patriarchy, and relations to nature and challenges them (Viezzer 1986; CEAAL 1987). Maria Mies (1983) concludes that women in general are more sensitized to the psychological mechanisms of dominance because they have experienced it throughout their lives and are therefore more in a position to assume an on-going dialectical process of learning about each individual's reality. By seeking to understand the multiplicity of oppression, feminist popular education works towards a broader understanding of social transformation and methods by which it can be achieved (Rosero 1986). Transformation is not a product but a process and therefore, transformative learning is a life-long process of learning.

Feminist popular education draws attention to the fact that the global economic systems is values driven, not neutral, that social and cultural traditions are values driven, and specifically, that gender relations are values driven. It is these specific values that need to be challenged.

Women working in critical education for social change through popular education have discovered that in order to guarantee women's participation in workshops, meetings, seminars, or environmental action projects, these events and learning sessions must be planned to incorporate the demands of women's daily lives. These include such elements as childcare and the inability to travel great distances to participate either due to heavy work commitments at home or the lack of funds for bus fare or access to other forms of transportation (Ba 1993).

Feminist popular education is both action and process-oriented. The method of arriving at a decision or understanding a particular issue is considered to be as important as the result. Any process begins from the knowledge base of women and men, involves a high degree of participation and comes from a basis of mutual respect (Arnold and Burke 1983; Ba 1993). Freire believes that an atmosphere of mutual respect establishes a dialogue among equals (Freire 1972). The challenge for feminist popular educators has been to ensure that women's realities are given respect and voice. Effective means have been group consensus-building strategies work openly and encouraging active and full participation. The are used not only ensure a process which is more likely to be fair, but also work to gain the maximum amount of support for any action which will be taken.

Another key element which feminists have brought to the popular education movement is the notion that feelings, emotions, intuition and aesthetics are important in the learning process (Rosero 1986). Freire suggests that strong emotions can be a force toward transformation but they can also be immobilizing (1972:8). For many women, techniques such as popular theatre, poetry writing, storytelling, dancing, singing, and drawing have become critical elements in helping them express their emotions without becoming immobilized (Manicom 1988). Many women educators promotes the idea that, since people learn in different ways, it is important to use as many different activities as possible to stimulate emotion, creativity, imagination and learning. These techniques can often be more effective than the written word (Rocero 1986). Manicom (1988:29) has found that educators in the Dominican Republic use drawing as a particularly effective way of communicating ideas which many women are too fearful to say. In order to deal with intense emotions Tristán (1987:12) notes that "it is necessary that an atmosphere of confidence and respect be created in the group" which is the fundamental principle of feminist practice.

Feminist popular education is becoming an important force within social movements and environmental struggles (Viezzer 1986). Because it is both personally and politically focused, helps women and men to work in defense of the environment together to transform their own behaviour and then to mobilize politically to challenge policies, practices and structures which promote destruction, waste and social inequality. Feminist popular education is transformative in that it is an action-oriented educational processes which begins with the daily lived experiences of women and men living in communities and seeks to understand and challenge the processes, functions as well as structures which are responsible for particular social inequalities and environmental threats. Many of those involved in these processes find them empowering. This type of learning process has proven to be a catalyst to attitude and behavioural changes as well as to working towards a global paradigm shift (Hall and Sullivan 1994).

### B. Women as Educators, Teachers and Communicators

Women's knowledge and skills as educators around the world have been consistently undervalued and often completely disregarded. However, women have always played a central role in informal and non-formal education, transmitting knowledge about culture, family and sharing stories (Rodda 1992; Weiler 1988). Around the world, women have been involved in teaching traditional medicine and health care, seed collection and the maintenance of biodiversity, farming and the processing and preservation of food, skills which will become increasedly more vital to the survival of the planet (Lechte 1993; Rodda 1991).

Women are the first environmental educators, connecting with their children and passing along an understanding of the natural processes which take place around them (Dankelman 1988; Rodda 1992). Around the world they have become increasingly more adept educators, communicators and information specialists vis-a-vis the environment (Rodda 1992). Through their education practices, women have become active agents of change in society. The teaching methodologies and practices they use to foster environmental action are inclusive and sensitive to gender. Women's education methodologies aim at empowering those with little or no power and enabling people to see that they in fact do have the power to change the world (Ba 1993; Rodda 1992; Dankelman 1988). Women's education brings a gender perspective into theory and methodology and creates ways of working with men and in mixed groups which do not allow women to be devalued or ignored. Women teach non-violent methods of civil disobedience action and create exercises which analyze power and domination, to build a broader political awareness of the exclusiveness and destructiveness of present policies and beliefs.

Women as communicators and information specialists are beginning to understand the value of using the media to raise public awareness. Through radio and television the whole world can be linked, thereby reaching a greater number of people. The further people spread the word, the more support they can hope to gain.

### C. Redefining and Challenging Power

> The empowerment of women as people and their access to power to help change and improve their lives remain key issues in the gender struggle.
>
> Rocio Rosero, 1989

> Women's greatest disadvantage is the result not of individual characteristics but of power relations: in economic relations between capital and labour; in gender relations between men and women; and the systemic construction of race and ethnicity.
>
> Jan Borowy, YWCA

"Understanding the roots of the global ecological crisis means understanding power - those who have it and those who don't" - the power of the North over the South, rich over poor, scientific knowledge over traditional ways of knowing or popular knowledge, governments over people, one race over another, humans over nature, and men over women (Hausler 1993:84).

The rise of modern science, capitalism, and the Enlightenment, has radically changed the once organic view of relationships among the natural world, political authority, and social organization which was once held. It became "a more mechanistic rendering of relationships among nature, state and society, the ideology of a natural order was replaced by a particular order imposed by the sovereign state upon its atomistic, competitive, and avaricious subjects" (Peterson and Runyan 1993:123-124). Nature came to be viewed as a site of disorder and therefore became a preferred symbol for the justification of authority, something to be controlled, manipulated, moulded and changed. Like nature, women, too, have served as central and omnipresent symbols underpinning justifications for political authority (Peterson and Runyan 1993). The women's movement has raised its voice to condemn these visions of women and nature and fight against injustices and inequalities, working in support of peace, social change and a new relationship with the environment.

Transformative learning processes redefine power by first trying to understand the nature of power. Peterson and Runyan (1993:33) suggest that "power is usually defined as 'power-over', specifically, the ability to get someone to do what you want. It is usually measured by control of resources...it emphasizes separation and competition." It is also, as Vandana Shiva (1989) notes, the ability to name what constitutes knowledge and who is knowledgeable. Therefore, transformative learning start with the knowledge and experience of the participant, and promotes personal empowerment by providing the space to realize her/his own potential. As women begin to examine power relations as evidenced in their daily lived experience, the multi-dimensional aspects of power become more evident. By seeing power in all its totality, it becomes more possible to dismantle unjust power relations and share power based on a new conceptualization of what it can and should be (Peterson and Runyan 1993; Eisler 1988).

Joni Seager (1993) states that many women in the North although at the forefront of environmental struggles, are finding themselves relegated to the margins within the mainstream environmental movement. She believes that this is because it is becoming "professionalised and bureaucratized" and masculinized (pp 168). There has been movement away from passionate, emotional discussions vis-a-vis the environment to a more factual, scientific language which is believed to command more respect. The move is towards "working like men" and presenting aggressive bottom-line arguments which go on in boardrooms around the world (pp 171). "Women continue to be excluded from the power tracks of eco-management" (pp 264). Those who choose to remain within the mainstream green movement, are challenging the "'eco-warrior' heroics of ramming whaling ships in the Arctic and spiking trees" and introducing alternative actions based on non-violent means (Bari 1993:48).

"Many women are not interested in learning how to operate in this style" and challenge this power by "creating a new culture of environmental activism" (pp 171). They are taking initiatives and assuming leadership roles in environmental alliances that lie outside the formal structures of green politics and environmental organizations - in grassroots, community-based organizing, national campaigns and movements. By developing alliances with other women, and developing their own action initiatives, women are better able to challenge power structures (Seager 1993). Women leaders in these alternative environmental groups are developing, in practice, a shared politics that goes to the heart of what it means to create social and personal transformation.

Around the world, women have been primarily left out or marginalized in the previous dominant power paradigm, a paradigm that has brought the planet to the brink of destruction (Shiva 1989). Often, they have been socialized to feel inferior, they are often not comfortable with having power and don't know how to use power. Seager states that the majority of the world's women do not want power but equality, and certainly not the patriarchal notion of power over others (Seager 1993). Theories and practices which many women use often recognize the many faces of power and work to redefine it by revealing new concepts of power, transforming them to a power within and a power to act rather than the present model of power over (Eisler 1988; Starhawk 1982). Therefore, women are coming to the fore to assist the planet by developing a new paradigm which respects life on earth and works on the basis of equality not hierarchy (Rodda 1992).

It is as women reach out to learn from one another and work together that not only can the "knowledge process be enriched but (also) the process towards transformation for women and society as a whole" can take place (Seager 1993:270). By using their own methods of teaching and organizing for environmental change, creating their own networks and movements, and re-defining and challenging prominent structures and practices of oppression.

## 4. Women and Environmental Action

> ...there can be no liberation for women unless there is also an end to the exploitation of nature and other peoples. On the other hand...there will be no true national liberation unless there is women's liberation and an end to the destruction of nature.
>
> Maria Mies, 1983

Women have begun to play a major role in the struggle to save the planet. In fact they are at the forefront of many major initiatives, struggles and actions (Seager 1993). The roles they play are diverse, ranging from practical local actions such as planting trees, reviving traditional agricultural practices and setting-up recycling programmes, to more political actions such as organizing major protests, campaigns, blockades and conferences. Women have created strong global networks which enable them to share their work, concerns, strategies and actions with women from around the world (Dankelman 1988; Sontheimer 1991; Rodda 1992).

Warren (1992:16) states that "women are the primary users of natural resources for human subsistence in the developing world; therefore they have an extensive knowledge of their environments that is based on culturally-derived expertise and their own daily experience." Because of their close relationship to the earth, women recognize the dramatic changes taking place in the environment around them, realizing the real threat this poses to the planet. As fuel wood becomes harder to find, water more polluted, food and cropland more scarce, women begin to use their knowledge to organize locally, network globally, and become more politically active. They form small dynamic local organizations or national coalitions that enable them to share experiences, workloads, problems, and identify and explore their own needs, and come up with their own solutions to resource conservation (Warren 1992). Now more than ever, women are playing a critical role in environmental protection, education and the preservation of quality of life (Dankelman 1988; Lechte 1993; Seager 1993).

The term environment refers to all the biophysical components of the natural world such as land, air, water and including the atmosphere as well as all organic and inorganic materials and living things, all elements of human society including social, economic, cultural, aesthetic and spiritual, physical and mental wellbeing, security, justice, peace and gender relations and the interaction of all of these.[3]

### A. Grassroots, National and Global Organizing

> Around the globe, women are shaping the environment and caring for it.
> Irene Dankelman, 1988

> Women, too, have equal strength, anger and power.
> Sarah Warren, 1992

Women have for decades initiated movements that have been nationally and internationally recognized. From the perspectives of how women live and cope with environmentally distressing conditions, women through their organizing have produced demonstrably effective approaches for more sustainable uses of natural resources, environmental preservation, and often use and manage land, water and forests in life-sustaining ways (Sontheimer 1991). By doing so, they challenge conventional accounts of the role of women as merely keepers of the hearth (Rodda 1992). Many of their initiatives are both spontaneous and guided and are taking place worldwide. Perhaps the best known action to date is the "Chipko Movement in India, which has been successful in preventing the destruction of large areas of forest" (Rodda 1993:109). This collective action has become an inspiration and education/action model of many other movements and initiatives around the world (Shiva 1989; Mies and Shiva 1993).

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[3] Canadian Council for International Cooperation, Ottawa, 1992

Chipko is a Hindi word meaning "to hug", named after its members who hugged trees to prevent them being felled by foresters. Although the first Chipko workers were men and women, more and more women joined the movement when they realized that the recurring floods and landslides from which they were suffering were caused by deforestation. When the Forest Department announced an auction of 2500 trees in the Reni Forest overlooking the Alaknanda River, which had already flooded disastrously, Gaura Devi organized the women of her village to protect the trees from the company that won the auction. They physically prevented the tree felling, and thus forced the Uttar Pradesh government to investigate. Two years later the government placed a 10-year ban on all tree felling in the area but this newly created powerful group did not stop there. They began to work together with other women in Asia and prevented felling in many other forests all along the Himalayas. They have also set up cooperatives to guard local forests, and to organize fodder production at rates that will not harm the trees. Within the Chipko movement, women have joined in land rotation schemes for fodder collection, helped replant degraded land, and established and run nurseries stocked with species they select (Shiva 1989). Durning (1990) suggests that "Chipko has gone beyond resource protection to ecological management, restoration, and what members call "eco-development" (pp 37). Chipko is being practised in many parts of the world such as Canada, and now symbolizes Third World resistance to misdirected international development aid in general and resistance to non-local commercial exploitation of locally based resources in particular (Shiva and Mies 1993). "Women have organized themselves for centuries around village wells, in tribal councils and other traditional, informal ways (Dankelman 1988:140). They "are the backbone of virtually every environmental group around the world. With few exceptions, women constitute approximately 60 to 80 percent of the membership of most environmental organizations" (Seager

1993:263-4).

Like Chipko, the spirit of the Greenbelt Movement in Kenya, spearheaded by Wangari Maathai, is now spreading to many other countries (Rodrigues and Shallot 1993). Lechte (1993) describes the main activities of this movement as tree planting and restoration by women which has not only saved degraded environments but provided fuel and food. Thousands of actions around hundreds of issues are now being documented.

In many countries in the South, SAPs have been a major force behind environmental degradation and the impoverishment of thousands of women and their children. In Nigeria, women combat SAPs by creating their own monetary systems and refusing to plant the cash crops that are dictated (Bisi 1992). In India since 1983, more than 200 women's cooperatives have been founded due to survive economic change. There are at least 31 grassroots support organizations in various Caribbean islands and, 11 national women's organizations in Mexico and many others directed by women (Fisher 1993). The Feminist Information and Action and Centre in Costa Rica "promotes self-help housing built around shared courtyards where endangered plant species are grown (Fisher 1993:118). This last effort reveals an awareness not only of the essential need for humans to live and work more closely together, but also an understanding of the vital role biodiversity plays in maintaining a healthy environment and productive world. Indigenous women's around the world are also very much involved, through voluntary organizing in the protection of their lands and ways of life. In the Northern Philippines the Igorot indigenous women, inspite of their active participation "in defense of the ancestral land" have not yet been conferred a status of equality with the men. They bear not only the burden "of gender oppression ranging from non-recognition of [their] rights to ancestral land and to self-determination, increasing state and domestic violence and lack of social services to non-recognition of reproductive rights." In addition, their participation in political decision-making "is highly limited" (Tauli-Corpuz 1992:1). By March 1990, INNABUYOG a region-wide federation of women's organizations was organized to meet both the productive and reproductive tasks of women. This organization operates on a voluntary basis in the "spirit of collectivism and cooperativism" (pg. 4). And in the North, Cherokee women activists living in Oklahoma, United States, joined together to prevent the dumping of nuclear waste into "injection wells" around the state (Seager 1993:268).

The role of non-formal adult education is a critical element to the action initiatives of women around the world. Lechte (1993) states that women focus not only on the action but also on the educational aspects of the action to help "develop an understanding of the problem and how to solve it with maximum participation" (pp 9). Women mobilizing for action use education in their work because of its ability to transform the individual and the world around them (Lechte 1993). In Bolivia, songs, popular theatre, video, and other media are effective educational tools in the environmental struggles. Various musical groups have been writing environmental songs which are used to educate the broader public on environmental issues both at home and around the world (Lechte 1993). The Navdanya project in India, spearheaded by Vandana Shiva and Vanaja Ramprasad, is a symbol of the celebration of diversity and resistance and a coming together of education and action in a popular form. Literally, Navdanya means nine seeds and metaphorically it represents balance based on diversity at every level, from the cosmic domain to the community, from the ecology of the earth to the ecology of the body. The symbol of Navdanya has been adopted by a national network of grassroots conservation efforts to protect their traditional agricultural biodiversity, the basis of cultural and material sustenance of the peoples of India. Navdanya is a response to the Green Revolution, an initiative to build a network of biodiversity conservation programmes based on people's knowledge and active participation. Popular participation and education is Navdanya's organizational philosophy and conservation of diversity is its ecological philosophy. Citizen action in India is aimed at protecting and restoring biodiversity through cultural/spiritual, political and national approaches and networking. As the traditional keepers of the seed, women's roles in the maintenance of biodiversity has become. Educative sessions begin with the experiences of the individuals, how they view monocultures, what they have lost and what they hope to gain by participating in these programmes. Women's discussions around gender focus on the fact that although women are a majority of the farmers, they own very little of the land and have very limited access to financial resources. Women are now beginning to demand a place and role on community decision-making committees. As the keepers of the seeds and therefore the maintainers of biodiversity their knowledge and practice is gaining more respect and understanding within the community. Workshops bring farmers together to share knowledge and experiences with organic and traditional farming practices which they hope will one day make communities almost totally self-sustaining. Films and literature on organic farming are used to enhance education. Pamphlets on the Green Revolution and Agra-business provoke debate and strengthen knowledge of the practices and policies which are so environmentally destructive. Seed fairs are a forum for buying, selling and sharing seed stock as well as a celebration of the work being done to preserve and enhance biodiversity. Navdanya's practice of transformative learning includes participatory processes which bring women and men together as equals in struggle and celebration around issues of gender, biodiversity conservation and sustainable agriculture.[4]

The El Salvadorean National Rural Leadership network for Quality of Life Project developed by Marta Benavides is a response to the fact that next to Haiti, El Salvador is the most environmentally deteriorated in the Western hemisphere. It is a country which has gone through a devastating civil war that destroyed most of the country's environmental and social fabric, leaving thousands of orphans, widows, "disappeared", polluted waters, rampant deforestation and epidemics such as cholera and tuberculosis are common. Food is very expensive and there is no practice of food conservation. The purpose of the project is to use popular education to expand on the knowledge base of people in the rural areas in cooperation with city groups, universities, educational institutions, churches, etc. to save the national resources such as water, soil, medicinal and nutritional plants, culture and spirituality. The project also works to create cultural pride, promote gender equality, participatory and cooperative relationships. Although usually the entire family participates in the various processes of planting and harvesting it is mostly young boys and adult males who take on this responsibility. The women are left to carry water, prepare meals, wash clothing, clean the houses, take care of the children, provide health care, and care for livestock. The fact that women are not involved in planting and harvesting usually results in their not having the right to own any land. This occurred even in the land distribution programme that resulted from the peace agreements. As weak as the programme has been, the male in the family received the title and women could only get one after a great deal of struggle. It continues to be a major struggle for women. In addition, men do not help with any of the household chores and women are left with the majority of the work. Members chosen by the community are taught soil and water conservation and management practices. Various learning sessions analyze the socio-economic and political conditions, history and culture.

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[4] Based on a case study of the IDRC project "Transformative Learning Through Environmental Action"

Other sessions focus on respect for the environment by making organic fertilizers using crop rotation to eliminate pests, conserving water, fuel and food, and developing family medicinal and vegetable gardens. There is an understanding that long-term solutions must come from community commitment and cooperation. It is seen as a way to live and build peace, not just struggle for it. The communities are asked to appoint members who will be committed to sharing and continuing to learn. There is a special programme for women that responds to their particular needs in the group, community or region as a whole, such as legal issues, health, family relations, nutrition, etc. Women are very active in the training, planning and carrying out of the programmes. Women also use this time to discuss issues of gender and work together to provide support for one another. One of the training sessions had a group of women plan and cook a meal, while a women facilitator talked about the inter-relationship of the food to sustainability, sustainable agriculture, nutrition, health, family orchards and gardens, composting, latrines, water, fuel and food conservation and management. To acquire foods for the meal, participants walked through the farm gathering various plants and vegetables useful for making a more delicious, nutritious and abundant meal. In addition, talks focused on re-organizing kitchens to better preserve foods, reheat leftovers, store firewood, remove smoke and, in general, make a more comfortable place to work. A kitchen compost was created and its up-keep and use were learned. There was then a visit to the training site where men and women were digging trenches. On the way home, seasonal fruits were collected for dessert and hammocks were strung under trees for a period of relaxation and meditation.

Support materials are developed by the participants. The majority of people with whom the women work do not know how to read and write. Materials produced result from experiences and focus more on design, drawings and pictures than words. A book on traditional, natural and preventative medicine is being prepared by women educators. Participation and cultural aspects are the best support materials. Songs prepared by participants, theatre presentations and open sharing sessions are used extensively. A video of much of the work was made so that other communities can learn from the process. The process is very participatory, people who request the training must be committed to the principles of cooperation and equality and they also must coordinate local efforts and follow-up. People are encouraged to be inventive and creative which affirms their power to bring about change. Drawing and theatre productions are the best ways to encourage this inventiveness and creativeness and take the emphasis off the written word. Creating living museums filled with historical materials found in the area builds cultural pride in the community.

The people in Cacaopera have begun to share their training in cultural re-awakening and traditional medicines. Participants in other parts of the region plant crops using soil and water conservation techniques, and practice organic farming by using compost instead of chemical fertilizers. They have begun to see themselves more as a part of the land rather than a controller. By working with the land, both nature and the community have been restored. A greater understanding and respect for the practice of organic farming for their health, economic benefit, future of the community, their children and the entire country has evolved. These processes bring various efforts together and help people to understand the importance of connected and cooperative work. People see that they have the power to initiate and carry out programmes. They see the importance of sharing responsibilities and acknowledge the strength of people working and participating together. Their work makes a difference. Women explore the issues of gender and analyze the deep cultural roots of inequality. They use this information to educate men in the community and encourage girls to be more active in all activities, not simply those assigned by gender. Men have begun to work in the kitchens and women are learning all the process involved in sustainable communities, and sustainable agriculture. Links are being made between sustained peace and sustainable communities.[5]

Women have also become a more powerful force in lobbying governments for change. In Sudan, women concerned about toxic materials used workshops and the mass media for education. "They lobbied the government to ban dangerous pesticides and pharmaceuticals such as skin lightening products used by Sudanese women which contained highly dangerous heavy metals" (Lechte 1993:10). During the final Preparatory Committee meeting to United Nations Conference on Environment and Development (UNCED) held in New York, thousands of women from around the world came together to form the Women's Caucus. Women worked together on the numerous documents which were going to Rio de Janeiro for ratification. They tirelessly lobbied government officials and later, the concerns they had raised and changes they had suggested were echoed on the floor of the United Nations (ICAE News 1992).

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[5] Based on a case study of the IDRC "Transformative Learning Through Environmental Action"

Probably the single biggest coming together of women was during the UNCED in Rio de Janeiro, June 1992. La Planeta Femea (The Female Planet), organized by Rosiska Darcy de Oliveira and Thais Corral, was the single largest event held during the NGO Forum. Running for 14 consecutive days with a tent that held more than 800 people women met to discuss issues such as population, diversity and solidarity, electronic networking, biodiversity, action plans, health, the foreign debt, structural adjustment, development, ethics and spirituality to name a few. "Women came to Rio de Janeiro with a sense of unity, pooling their efforts at a single venue, in a single event, working together" (Darcy de Oliveira and Corral 1993:4).

Women have the ability to create active, dynamic and effective organizations. Their theories and practices can be transformative at both the personal and political levels. Janis Birkeland argues that to ignore women's theories and practices is to support "the status quo and impede social transformation" (Gaard 1993:15). Seager notes that experience of women involved in environmental struggles helps "to change the notion of what environmental destruction looks like. It is not always big and flashy "but manifests itself locally" (pp 272) and should therefore, be tackled on a local front as well as the national and global.

In the face of so many different types of social and environmental issues, these isolated grassroots initiatives appear minuscule. Women planting trees on a roadside in Kenya, hundreds marching in protest against a toxic waste site, or teaching neighbourhood children to read, write and value the environment does not seem like it can change the world. However, Durning (1990:6) states, "when added together their impact has the potential to reshape the earth" (Dankelman 1988; Rodda 1992).

Vandana Shiva (see Lechte 1993:13) states that

> [i]n the perspective of women engaged in survival struggles which are, simultaneously, struggles for the protection of nature, women and nature are intimately linked. The women's and ecology movements are therefore one and are primarily counter trends to patriarchal dominance...Their ecological struggles are aimed simultaneously at liberating nature from ceaseless exploitation and themselves from limitless marginalization.

Although many advances have been made, the history of women's involvement in ecological preservation is not just about progress, it is also about reversals and even declines. Many of the world's women continue to live in deplorable conditions of poverty and work in unsanitary conditions in factories under management that employs draconian abuses in the name of production. Motions towards change are often met with repressive action. One such example is Wangari Maathai of the Greenbelt Movement. Maathai has become a target of government repression, undergoing physical beating and imprisonment for her challenges to the Moi government. Just before the UNCED conference in Rio de Janeiro in June 1992, she was arrested and imprisoned but outcry from women's and environmental groups around the world eventually obtained her release and she was able to play a prominent role in the Rio conference (The Tribune 1992). Sithembiso Nyoni of Africa believes that women's struggles in the environmental field are important and most continue:

> I am not a very important woman in international terms, but I am very important in that I am directly involved in my struggle. I am very interested in women and sustainable agriculture for one reason: that my community and I are in a food crisis, we are interested in sustainable agriculture not for luxury, not for economic reasons, but first and foremost for our survival.

### B. Ecofeminist Theories

> One cannot say that it is more natural for women to be more interested in the environment than men, but it can perhaps be understood through history that if in a social relationship where women have always been treated as subordinate to men, and have been totally dominated by them, a parallel setting would have been created for men to dominate and destroy nature as well.
>
> Moema Viezzer, 1987

The growing amount of literature in the North conceptualizes the link between gender and the environment primarily in ideological terms (Agarwal 1992). The principles and views of this coming together have been the topic of much discussion and debate on how or if it is a productive vision or motivating factor for women. Ecofeminism embodies several different strands of discourses, most of which have yet to be spelled out fully and which reflect different positions within the Norther/Western feminist movement (Agarwal 1992).

Heather Eaton feels that "ecology and feminism come together around critique, praxis and vision."[6] Mies and Shiva (1993:13) state that ecofeminism is a new term for an ancient wisdom which "grew out of the various social movements such as peace, feminism and ecology in the late 1970s and early 1980s in response to re-occurring environmental disasters." This term was coined by Francoise D'Eaubonne and its practice has been gaining momentum around the world. Plumwood (1994:10) notes that it is essentially a "response to a set of key problems thrown up by the two great social currents of the late part of this century", namely feminism and the environment movement, and is an attempt to address a number of shared problems. There are many different elements and views as there are critiques and debates of this theory refereed to by Vandana Shiva as the final "ism".[7]

In her article, Hessing (1992) puts forward a succinct analysis of liberal, radical and social ecofeminisms. In brief she states that radical ecofeminists look at the issue of sustainability as an inherent characteristic in women's ideas, work, and teaching. Radical ecofeminists present a positive image of women, seeing their close spiritual and physical association to nature as inherent to all women, and see this as both celebration and protection. There is a strong emphasis on the universality of women's spirituality. While radical ecofeminism attempts to counter the effects of cultural conditioning through the revaluation of women's roles and the creative alternatives, liberal ecofeminists emphasize fairness and equity within the existing systems. Liberal ecofeminists attempt to empower women through access to education, higher wages and other privileges which men have in this society. Socialist ecofeminists, she argues work within a Marxist framework and share a view which condemns not only patriarchy as a catalyst to women's and nature's oppression but also the international economic forces which are at work. Hessing goes on to note that radical ecofeminism is seen as problematic by some women because it often treats "attributes such as spirituality, emotional depth, and nurturing as universal" (Hessing 1993:16-17) to all women in all cultures which is not the case. Liberal ecofeminism is seen as limited because it works within the system and therefore fails to tackle the root causes of women's and nature's subordination (Hessing 1993:18-

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[6] This statement came from a speech which Heather Eaton made during the speaker series at OISE on Women and the Earth, February 1994.

[7] An interview by Now Magazine with Vandana Shiva, February 1994.

19), the system itself. Socialist ecofeminists are praised for their strong economic and class analysis; however, they seem to focus little on environmental concerns.

Other key elements within ecofeminism are transcendent dualism, a theory that defines the cause of both women's oppression and the human domination of nature, spirituality, and goddess worship. With the diverse elements of ecofeminist theories in mind, there are various critiques which must be explored.

An encompassing critique of ecofeminism is expressed by feminist Ann Cameron in Reweaving the World (1990). Cameron believes the label ecofeminism takes away from the feminist movement and is unnecessary because feminism always focused on issues of peace and the environment:

> The term "ecofeminism" is an insult to the women who put themselves on the line, risked public disapproval, risked even violence and jail. Feminism has always been actively involved in the peace movement, in the antinuclear movement, and in the environmental protection movement. Feminism is what helped teach us that the link between political and industrial included the military and was a danger to all life on the planet. To separate ecology from feminism is to try to separate the heart from the head. (pp 18)

Women have struggled for many years, challenging and redefining priorities within the various movements which express a more humanistic, quality of life focus and ecofeminism can only lead to the fragmentation of this struggle (Seager 1993). Others charge that the ecofeminist perception of an affinity between women and nature is not necessarily appropriate to all cultures and can send women back to the margins (Seager 1993). Huey-li Li's "A Cross-Cultural Critique of Ecofeminism" (Gaard, 1993) critiques the Western feminist notion of "transcendent dualism". She explains that this may work in Western society; however, in Chinese society, the absence of transcendent dualism does not preclude women's being oppressed. No such parallels can be drawn between Chinese people's respectful attitude toward nature and the inferior social position of women" (pp 276).

Yet another critique of ecofeminism focuses on the elements of spirituality and goddess worship and what is seen as an inward-turning, self-nurturing goal which is a-political. One critic states that:

> Especially in our present society - a society glutted with myths and tinsel images - we must seriously question the use of myth in alternative political movements. Myth cannot fight myth. Ruling classes have always encouraged confusions between illusion and reality

> in underclasses. The fact is that whether a goddess was worshipped in prehistory or not, she was an illusion then and she is an illusion now. In an age of manipulation and myth...we must restore the ecology movement as a realistic - not illusory - view of nature, and a political - not a religious - view of politics (Seager 1993:251).

Janet Biehl believes that the crystals, chanting, witchcraft and goddess worship is totally ineffective in dealing with the ecological crisis. She believes that these cultural symbols should not be confused with social realities and that a goddess is not more desirable than a secular society (Biehl 1991).

Bonnie Kettel of Canada (see Warren 1992:17) does not accept the ecofeminist view that "women are better at 'nurturing' natural resources than men." She argues that ecofeminism is just another gender construct, "based on culturally-derived notions about women's biological attributes (pp 17). But she does believe that although women and environmental analysis does not suggest that women are better resource managers than men simply because they are women, she notes that this analysis suggest that they have "a background of experience - in resource use and management, and yes, in nurturing children - that provides them with a knowledge base and an outlook critical to promoting secure livelihoods in the developing world" (pp 17-18).

However, there are a number of women around the world but particularly in the North, working in the environmental field who label themselves as ecofeminists and very different views of its value to their work from those above. One strong advocate of ecofeminism argues that its strength is in the streets. It is

> [h]ere we see that the supposed antagonism between active political resistance and spiritual passivity does not seem to hold. Indeed, individuals who have been inspired and motivated by their beliefs in Earth-based spirituality have often been some of the most active defenders of the planet. Thus it would seem that narratives that deny or ignore the spiritual threads of ecofeminism fail to acknowledge some of its most creative features. (Seager 1993:251).

Mies and Shiva (1993), two prominent women in the environmental field, claim that for women in the South fighting for the conservation of their survival base, "the spiritual element is the icing-on-the cake" (pp. 19). They note that

> the divorce of the spiritual from the material is incomprehensible for them (women). The term Mother Earth does not need to be qualified by inverted commas, because they regard the earth as a living being which guarantees their own and all their fellow creatures' survival. They respect and celebrate Earth's sacredness and resist its

> transformation into dead, raw material for industrialism and commodity production. It follows, therefore, that they also respect both the diversity and the limits of nature which cannot be violated if they want to survive. (pp. 19)

Mies and Shiva see this kind of materialism or earth-based spirituality as "rooted in the everyday subsistence production of most of the world's women" (pp.19). Therefore,

> ecofeminist spirituality as we understand it is not to be confused with a kind of other-worldly spirituality, that simply wants 'food without sweat', not caring who it comes from or whose sweat it involves (pp.20)

A large number of women around the world find that ecofeminism does provide a useful framework for a political analysis, and also explores the links between androcentrism and environmental destruction. Ecofeminism is considered a process of awareness "that begins with the realization that the exploitation of nature is intimately linked to Western man's attitude toward women and other cultures" (Gaard 1993:18), values displayed within capitalism and other repressive systems. Plumwood (1994:8) writes that one of the essential features of an ecological feminism is that it gives "positive value to a connection of women with nature" which has, particularly in the west, had a negative cultural connotation and which "was the main ground of women's devaluation and oppression."

Ecofeminism is also seen as an holistic value system in which actions and values are inseparable. Tzeporah Berman (1993) sees ecofeminism as a "theory, life practice and movement for social change through which the connections between the domination of nature and the oppression of women in patriarchal society is explored and validated" (pp 6). Some of the basic principles to which most ecofeminists subscribe are described by Janis Birkeland (see Gaard (1993) pp 20).

The first principle is that fundamental social transformation is necessary to save this planet which means a reconstruction of underlying values and structural relations. Second, everything in nature should be viewed as having intrinsic value, and a reverence for and empathy with all life forms is an essential element of social transformation. Third, an understanding of the interconnectedness of all life should be developed. Fourth, humans should not attempt to manage or control nature but should work with nature. Fifth, merely distributing power relationships is no answer. Power-based relationships and hierarchy must give way to an ethic based on mutual respect. Sixth, dualisms based on male/female, culture/nature, spiritual/natural, traditional knowledge/science divide people against each other and the non-human world, and create unequal power relationships which must be re-defined. Seventh, process itself is an important goal: the journey as important as the destination. Eighth, the personal is political and power and energy must be withdrawn from patriarchy which has manifested itself through the capitalist system.

Ecofeminist perspectives start from the fundamentals of life and realize that any ideology which authorizes oppression such as those based on race, class, gender, sexuality, physical abilities, and special needs is an ideology which would sanction the oppression, manipulation and destruction of nature (Gaard 1993). Many women, whether they name it ecofeminism or not, since it is still principally an active argument and not one engaged in at the grassroots, work from the various premises outlined above and incorporate them into their educative and environmental work.

## 5. Case Studies

The following two case studies, one from the North and South, illustrate women's ways of organizing and teaching for environmental action. They also show that feminist popular education methodologies which came out of Latin America have been adopted by women working in defense of the environment in Canada. The two projects are spearheaded by women who use a gender approach, ecofeminist and popular education principles of learning and teaching to inspire environmental action. They view the learning which takes place as transformative primarily because the process encompasses so many different layers of learning - from the personal to the political and from practical needs to strategic interests. The two studies focus on very different types of environmental struggles and show how transformative learning takes place in both.

Information for the case studies was acquired through a questionnaire and either personal or telephone interviews. Questions focused on the environmental background of the project, the socio-political aspects of project, the educational methodologies and practices, organizing principles, materials used, the role of women and issues of gender, and why and/or how these women viewed the work as transformational.

## Citizen' Action Campaign Against Hunger and Poverty and for Quality of Life[1]

Hunger is manufactured here.

Moema Viezzer

More than 32 million Brazilians go hungry everyday. Almost 70% of the Brazilian population does not have enough to eat and therefore suffers ill health. According to a study done by the Institute of Applied Economic Research, 9 million families have monthly incomes insufficient to purchase the most basic food staples necessary to satisfy their nutritional needs. These families live in poverty among raw sewage and the garbage dumps of the city. Everyday approximately 1,000 children die of hunger and/or disease although Brazil produces sufficient food to feed all of its own people. Everyday, food is carelessly thrown away or lost through harvest practices. This does not take into account the thousands of tonnes lost to rot before they can be distributed due to irresponsible storage systems. We feel that "hunger is manufactured here".

### The Project

The National Campaign Against Hunger and Poverty began in August 1993 in Sao Paulo and has quickly spread to many provinces of Brazil. The campaign was initiated by IBASE. Rede Mulher, a key Brazilian women's popular education and advocacy network is assisting with the campaign. The work of Rede Mulher has been to organize locally, nationally, and internationlly. Its major focus is to bring about awareness of the food problem in Brazil and organize groups to work towards self-sustainability. A campaign secretariat has been established and various smaller committees around Brazil created. Since the inception of the campaign, thousands of women have joined together to protest the massive hunger and poverty which affect the majority of Brazil's population, particularly women and children. Women are working against the "feminization of poverty" by asking the questions why only women spearhead community-based action initiatives against hunger and about why so many women head's of so many households live in abject poverty and watch their children either die of hunger or be killed on the streets. This campaign is about raising awareness, changing relationships, understanding politics and patriarchy, changing attitudes and behaviours, learning to share responsibility and power at all levels, and learning how to rejuvenate and work with the land so it will provide food. It is learning for personal and social transformation.

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[1] Based on an interview with Moema Viezzer of Rede Mulher, Sao Paulo, Brazil

Rede Mulher began its citizen action by developing partnerships with other popular women's organizations in some of the poorest barrios (neighbourhoods) of Sao Paulo. The organization, awareness raising and educative work is done at various levels and in different ways. At the international level, Rede Mulher is raising awareness of the growing hunger and poverty crisis in Brazil by translating and editing their own materials and information pieces and disseminating them around communities, to the media and the world. Representatives participate in conferences and seminars, speak at forums and run workshops in various countries.

At the national level, Rede Mulher organizing a conference in July 1994 in Brasilia. Approximately 5000 people from various committees around Brazil attended this conference. On a provincial level, Rede Mulher actively links many local committees and assists to create new ones throughout Brazil. Much of their work includes running seminars, training volunteers, and liaising with the media, institutions, universities, churches and women's organizations. At the local level, Rede Mulher has begun an educative and environmental project in partnership with a group of women who coordinate a community association in Jardim Kagohara, a suburb of Sao Paulo. The key objective of this project is to work together to assist the families involved in the project to transform themselves from "paupers to producers". The women working on the project have divided the project into three key foci: solidarity, self-organization and help, and political pressure.

Locally, each month, Rede Mulher collects approximately 500 kilos of non-perishable food items from middle class institutions, families and through schools, and transports them to the local committee in Jardim Kagohara on the outskirts of Sao Paulo. This committee has close contact with two groups of needy families: one of 42 families and the other of 21 families. The committee ensures that the food stuff is distributed around the community. On two afternoons during the month of December 1993, in a relatively small geographic but high density area containing over 300 apartments, Rede Mulher collected 800 kilos of non-perishable food stuffs, clothing and toys which were transported to Jardim Kagohara. Throughout 1994 the educative element of Rede Mulher's project will be to establish direct contact between schools and community associations so that the hunger of some and the abundance of others can be made visible and analyzed. This type of practice creates a forum in which all involved work together to build a collective vision of "another way of being", a new, more equitable Brazilian society.

Another part of the project is to create organic, community gardens and organize a small enterprise called "Diversity Grains" which has already become an invaluable resource for the community. As the community clears the land, Rede Mulher holds sessions for community members to analyze the strengths and weaknesses of the project, the needs and challenges to future expansion. Rede Mulher brings in professionals to initiate organic gardens and run courses in crop diversity. The work is then handed over to the community. Once a month an educative session brings members together to discuss daily life in their communities, gender relationships, spirituality, and the socio-political situation of the country. The group hopes by the end of the year to be self-sustainable at least in certain aspects, and work as an educational support to others in the area. Another key component of the campaign is non-violent street protests which have attracted the media's attention to the issue of hunger in an unprecedented way.

## Gender Issues

Two major gender issues have come to the fore during this campaign. The first is the phenomenon of the "feminization of poverty." It was noted that within the groups taking active part in this campaign, over 80% of the households were headed by women. These women are single mothers, widows, separated or simply abandoned by their husbands. Therefore, a major element of all discussions focuses on the question of where all the men have gone. One aspect is that the men became frightened and chose to escape rather than face a painful life of poverty. Another aspect is that, due to internal structural changes within Brazil, men have been driven away by capitalism to seek employment elsewhere. This has lead to the financial and emotional impoverishment of the entire family. It is women who are left with the tremendous burden. They often have little or no education or means of supporting themselves or their families.

The second issue is the sexual division of labour and decision-making which is prominent within the local communities and among the volunteers. The majority of the workers, organizers and teachers are women; however, they do not hold positions of power or work at the decision-making levels in established organizations and institutions and even less so within the ministries which work on the issue of hunger. The issue of gender imbalance is critical to this campaign.

The partnership formed between Rede Mulher and Jardim Kagohara is mutually beneficial. The project gives the women of Rede Mulher the opportunity to develop new ways of working with the question of gender, and connecting it with the issue of hunger. Rede Mulher works with the community association to bring issues of gender to the fore, ensuring that the question of gender is visible in all aspects of their work. It provides a space for discussion to take place. Methods such as singing, dancing, drawing and theatre are often used to express frustrations and fears. The issue of gender is included in all environmental education workshops under the slogan: "Two Partnerships Responsible for Hunger: Oppression of Women and Destruction of the Environment".

## Transformative Learning

Women involved in the campaign are becoming personally empowered. Their views and concerns are taken seriously and in fact, are the key focus of almost all discussions. They are working in the organic gardens, growing food for their family's survival. The learning taking place affects women's consciousness. The learning processes focus on both practical needs and strategic interests, and change attitudes towards beliefs and behaviours which deny or disregard in one way or another, conditions of poverty. For many women and men involved, this greater understanding has sent them into the streets to march and challenge unfair social policies. Non-violent protests and political pressure have forced the government to appoint a special hunger committee to look into the problem of food waste and export. But even more than the politics of the situation, women are understanding more about the role of patriarchy. They are beginning to realize that women's subordination in society came along long before capitalism and they are working with men in the community to change the socially constructed notions which perpetuate inequality and environmental destruction. Many people, particularly women, who started at the inception of the project, continue to be involved and are reaching out to others in other provinces. They are no longer just victims of poverty but a major force fighting against it. They are learning how to change what mainstream media see and report, organizing protests and spreading the word around the world.

## The Clayoquot Sound Clearcut Free Campaign[9]

> The women are already making links between environmental and social issues: the two cannot be separated.
>
> Tzeporah Berman

Clayoquot Sound (CS) is an area of coastal temperate rainforest located on the west coast of Vancouver Island in British Columbia (BC). It consists of 350,000 hectares of ancient forest, coastal estuaries, alpine tundra, beaches and islands. It is the largest unlogged area remaining on Vancouver Island, and one of the largest remaining intact areas of ancient temperate rainforests anywhere in the world. The integrity of the forests is being destroyed by clearcut logging.

This temperate coastal rainforest is home to ancient Western Red cedar, Sitka Spruce and Western Hemlock which are more than 1,000 years old. They are some of the tallest trees in the world, reaching heights of 95 metres with diameters of up to ten metres. The biomass in these North American old growth rainforests is three to eight times as great as that of the tropical rainforest. If one includes all species above and below the soil level, a northwest old growth forest may be more biologically diverse than a tropical rainforest. Forests also draw in carbon dioxide and produce oxygen which purifies the air for breathing.

The forests are also home to many of Canada's aboriginal peoples who have never ceded their territories and still maintain their ties to the land through activities such as fishing, hunting and trapping. Effects of clearcut logging such as soil erosion, and pesticide and herbicide runoff have degraded the ecosystems so severely that they have destroyed the traditional economies in many areas, further contributing to the impoverishment of aboriginal peoples.

Once the ancient rainforests of BC are cleared, 50% is replanted with a single species determined by the economic desirability of the species for future logging. The other 50% of the land is left to "natural regeneration". This system of monoculture plantations and natural regeneration often fails and has led to vast amounts of barren land. In some areas studied this unsatisfactorily restocked land has been up to 95% of the area.

A decision taken by the BC government to allow logging in two thirds of the remaining intact area of CS was met with outraged public protest. They ignored widespread public support for the protection of the area and international boycott threats. The chiefs of the five bands have publicly condemned the Government's recent decision on the future of CS. The Premier claimed to have consulted and gained support of the First Nations. The Chiefs of the bands of CS deny being consulted in any way.

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[9] Based on an interview with Tzeporah Berman, Greenpeace, Vancouver, B.C.

### The Struggle

On July 5, 1993 citizens outraged over the government decision on clearcut logging began blockading MacMillian Bloedel (MB) logging operations at the Kennedy River Bridge. Thousands of people flooded to the Sound to protest, and the blockades became the largest civil disobedience action in Canadian history. Over 800 people have been arrested and many have spent time in jail. The "Black Hole" peace camp (so named because it is an area which has been clearcut and burned beyond recognition) was set up on the West Main Road and is the site of the ongoing blockades. The Clayoquot Sound Clearcut Free Campaign was established. This campaign is spearheaded by women who use a gender analysis and popular education techniques to strengthen their actions.

### Objectives and Activities of the Campaign

One of the primary objectives of the Campaign is to impact on the protection of areas of CS's ancient rainforest, work towards a sustainable forestry practice worldwide and ultimately phase-out clear-cutting. Much effort is put into stigmatizing the image of clear-cutting both at home and abroad, revealing its devastating effect on ecosystems, the economy and people's ways of life. Another major objective is to obtain justice for First Nations people. This includes working with them on negotiations with the government towards an interim agreement to revert the land back to Native control.

Women are the key organizers and form the majority of people working on the Campaign. The peace camp is run according to eco-feminist principles of non-violent civil disobedience, consensus-based decision-making and equality. The grassroots organizing has come from women's organizational skills. Women have also devised the structure which is a coalition of union members, workers, environmental groups, etc. working together on a common cause.

### Education Practices, Methodologies, and Materials

The educational practices of the women in the peace camp focus on an action-based approach because they believe that actions speak. Their teaching methods are based on popular education approaches which build from the experiences and knowledge of all involved. Civil disobedience training seminars are held each day which include the reading of the non-violent civil-disobedience code. A consensus decision-making approach is used, everyone is heard, and no one is allowed to dominate the discussions or to interrupt the speaker. All legal dimensions and emotional aspects of blockade actions are discussed so people feel comfortable both emotionally and intellectually with their involvement. Everyone is expected to take a turn at cooking and security at the gate. Men and women carry the same roles and responsibilities.

Other crucial elements of the educative process for women include singing songs of women's strength from a variety of cultures, dancing, and reading poetry. On a number of occasions women and children have stood alone on the blockades while men watched from the sidelines. The woman's blockade is an act of empowerment, a celebration of women's strength and unity. "For many women, it was the impetus for their decision to be arrested." One of the blockade demonstrations consisted of a spiritual dance, "The Spiral Dance", a circle which weaves in on itself, a multi-layered inward spiral engulfing the women in their own spirituality and power.

Walks were arranged through the rainforest and then into the clear-cut areas so people could feel the difference between the living and dead and understand that this is not about trees but about the forest as a living, breathing ecosystem. Questions focused on humans' right to destroy an ecosystem.

The work outside of the camp consists mainly of outreach. Education materials used are clear and accessible. Plain language is used; scare tactics are not. Governments and corporations are pressured through petitions and mail. Information materials are mailed out to organizations and groups to share with their members. The emphasis is placed on the notion that people have power and can make a difference. Petitioning and canvasing door-to-door gives the opportunity for face-to-face dialogue on issues with community members.

Women are introducing the age-old concepts of non-violence and consensus into the green movement in Canada. They have begun to speak out, refuse to be silenced, and stand together in difficult times. They support each other and make it clear that every issue is a woman's issue.

They speak out against sexism, racism and other social diseases which serve to exclude people, particularly women, from participating in political movements.

### Gender Issues

The issue of gender parity at forums, press conferences and on panels is an ongoing struggle. In the vast majority of cases, the biodiversity experts are men, criminal lawyers and judges are men, loggers and government officials are men, RCMP are men. Even the Tribal Council's spokespeople are men. It is very apparent that in the environmental movement in Canada there are a significant number of active women, but those who are considered "experts" and the majority of the spokespeople are still men.

The women and children's blockade spurred on an ongoing gender relations struggle. Many men were against the women's blockade, labelling it as separatist. Women's blockades were often followed by weeks of subtle undercurrents and blatant overtones of sexism and misogyny.

### Transformative Learning

The learning is viewed as transformative because changes have taken place in some many of the young women participating in the action. These women arrived at the peace camp very unsure of themselves, having never taken a stand on an issue before. Over time, they became very active in morning community meetings which used consensus-based inclusive decision-making processes. All voices are heard and respected and they also build self-esteem. A 16-year-old woman, soft spoken, and shy upon arrival became the head of security for the camp. Regardless of age or gender, all viewpoints are taken into account.

The CS struggle has had a huge impact, beginning with a few hundred people protesting and blossoming into 12,000. It is an empowering experience because it gives people the power to act by joining a protest. It does not compromise peoples' values because it is non-violent and it shows the world that non-violent resistance can and does make an impact on the environmental crisis as well as the social world. Canadian society feeds on and promotes political apathy but joining in these types of activities creates a deeper political analysis and understanding which is far from apathetic. People's direct action has a transforming effect both personally and politically.

This struggle not only brings environmental problems to the fore but also creates the links between environment and social issues, and between cultural, environmental and social justice. The struggle is not just about wilderness, it is about local communities as well. It is a human rights issue; an issue not just of survival but of social transformation. The women are already making the links between social and environmental issues: the two cannot be separated.

The campaign and what has happened is transformative: living, cooking, struggling together, and building a community. Like feminism, it is about rediscovering oneself and the power within. People found the power in themselves to stand up and move from being afraid of the law to the freedom of being able to stand up for what one believed. A seven-month pregnant woman found the courage to stand up in court and say that she was not sorry for what she had done because she was fighting for her child's future. Women use the voices they have been denied so long. There has been something electric about women taking action together. Transformative learning is also about unlearning the subtle teachings of patriarchy, and people's anger around industry benefiting from death and destruction.

Campaign actions have brought about substantial political change. They have resulted in draft forest practices code, new methods of public participation in decision-making in forestry, and an interim agreement of new decision-making processes with Native peoples. Scott Paper of the United Kingdom cancelled a multi-million dollar contract with MacMillan Bloedel in early 1994 because it did not wish to be party to the destruction of old-growth forests in Canada.

## 6. Analysis of the Case Studies

The case studies reflect findings in the theoretical analysis of this paper. The women involved in these projects use popular education and transformative learning to understand and challenge structures, practices, beliefs, behaviours and attitudes which are responsible for social inequalities and environmental threats. They concretely show that women are beginning to take direct action, working both within their own communities and nationally to save the natural and social environments.

The learning within environmental action, can be defined as transformative because it involves elements of critique and action, encourages collective and social learning as a priority for change. In addition, transformative learning materials are based on the language, culture and context of where the action takes place; it provides visibility for indigenous, local solutions and context-specific leadership (Hall and Sullivan 1994). Hall and Sullivan also define transformative learning as something which enhances "understanding of the interconnectedness, the seamless whole of biospheric life which unites local, global, as well as all life forms" (pp 20) and involves experiences with nature. Transformative learning is seen as integral to political, economic, cultural, ecological and other aspects of changing power relations. In addition, it "draws strength from the richness and specificity of gender, race, ethnicity, age and other differences. The two case studies encompass these fundamental qualities of transformative learning. They also illustrate that within different countries, environmental action is popular education and a transformative learning experience in itself.

Evidence shows that countries are much healthier when everyone has enough to eat and lives a dignified lifestyle. Crime rates, instances of disease and environmental destruction rise when people are denied access to sufficient food, housing, clothing, education and other amenities which a smaller portion of the population shares (Lechte 1993). The women in these case studies bring together the elements of social and environmental change initiatives with gender parity. They work to ensure that their families and/or communities have enough to eat, clean air to breath, water to drink, land to be productive and healthy productive ecosystems.

Feminist popular environmental education is used to help people to see themselves as participants in shaping society, and become more self-aware of how their own beliefs and actions are able to shape behaviours and influence attitudes. It also attempts to show that the issue of gender is a societal issue, not just a women's issue. Women's teaching and learning focuses on understanding factors such as patriarchy, which compel people to take certain actions based on particular values and beliefs. Patriarchy has dominated the scene long before capitalism, structural adjustment policies or any other practices which are detrimental to women becoming full partners in life came along. It is important to note that these types of oppressions are values driven, not neutral.

This feminist popular environmental education discussed in the case studies, joins people together and strengthens their abilities while making them more confident to take a leading role in formulating strategies that challenge oppressive situations and structures. The studies illustrate that this type of educative work is vital because it helps people to understand how socially constructed powers, behaviours and attitudes can be challenged and changed.

The Brazilian case study shows how new groups are formed through the power of networking and education. It also shows that linkages must be made with wealthier communities which can contribute food stuffs but who also can form a part of the educative process, acquiring a deeper understanding of the concerns, needs and conditions of the poor. Working with the media is also an important aspect of the educational work which the Brazilian women do. Mass media has the ability to carry messages far and wide throughout a country. It plays a key role in shaping and influencing attitudes, opinions and social values. Media can create long-lasting images of people, places, issues and events, working as a powerful educative tool, both in positive and negative ways. Media makes a difference. Understanding the important role which media play, the key elements of how it works, and then using this knowledge to create short- and long-term strategies has become extremely beneficial in many of the campaigns. It has brought about political transformation and an emphasis on gender and class inequalities within Brazil.

The case studies show that women are extremely adept at using tools such as non-violent demonstrations, protests and blockades to bring attention to the social and political aspects of political problems. By taking direct large-scale political action together, women draw strength from and empower each other. Small group sessions which draw from the knowledge of participants empower those involved because it legitimizes the experiences and expertise which they have acquired throughout their lives. Working in a gender and age sensitive environment such as in Clayoquot, builds community and understanding.

Working collectively and openly, using consensus-building practices which work to build support for the action. The process itself is seen as an integral part of the action or work that will be carried out. Workshops on non-violent methods of civil disobedience teach that violence is not a necessary or even a desirable factor for change. This, particularly in the Clayoquot case study, is in direct contrast to many of the initiatives which have taken place in North America and Europe on how to deal with the environmental crisis.

The gender approach used in the projects draws attention to social inequalities between men and women and bring them together in struggle. The issue of male power and dominance in both studies is seen as fundamental to every discussion and to true social transformation. A gender approach also means understanding the need for special sessions to be held for women only. In these sessions women can speak freely of their own needs and concerns, draw strength from and empower one another. Often, these groups can be seen by male participants as a threat, or exclusive, as was revealed in the Clayoquot study,, however, having surfaced they provide a spring board from which to begin meaningful discussions on the nature of women's and men's relations in society.

These women use numerous methods to enhance the learning and ways of expressing which take place in an environmental action initiative. Nature reconnecting activities such as walks through an ancient rainforest develops an understanding of the forest as a living entity, not just a resource and allows sensory contact to teach personal and environmental integrity.
Role playing and theatre, singing, and drawing provides men and particularly women with a medium in which to express feelings and emotions which they would otherwise be unable to express. Creating one's own materials for learning and sharing information enables individuals to use the means of expression they feel comfortable with to educate themselves and others. In addition, creating materials avoids misinformation and gives a sense of power. It also enables those involved to locate themselves within their own struggles and particularly for women, to see their own lives and work as a critical teaching tool. The wisdom contained within the materials is recognized as knowledge and something which can be used to help others.

Although not expressly stated in the Brazilian case studies, it was clear that the women incorporate the basic principles of ecofeminism, as were outlined previously into their work. These include redefining power relationships, working in non-hierarchical ways, understanding interconnectedness and the intrinsic value of nature by preserving forests and creating organic gardens, supporting gender equality, and understanding and challenging patriarchy and other oppressive structures and policies.

## 7. Women, Transformative Learning and the Global Environment

Saving the planet will mean a major paradigm shift and transformations in ways of thinking and acting. It will mean understanding and challenging the powers, values and beliefs behind the environmental crisis and learning how to work for change. It will also mean learning from others, respecting and supporting other ways of knowing and being, and re-connecting with nature. It will mean working and struggling together to form a relationship between men and women and society and nature.

According to Hall and Sullivan (1994):

> all education, up to our present moment, has never countenanced the possibility of planetary destruction. This viability of planetary existence was never been an issue for educators because it was not, until now, part of our cultural understanding (pp 6).

A major role of education in the future will be not only to create understanding about the gravity of the global environmental crisis and the root causes of this crisis but also to develop ways of learning, communicating and sharing together to prevent total annihilation and to transform the world into a place which is more equal, caring and sharing. In many ways this is an exciting time, and women educators are only grasps the moment and devising systems of learning that can help to turn the tide of destruction.

Feminist or women-centred educational theories and actions are one very concrete way to bring a new understanding to the nature of power and transformation (Hall and Sullivan 1994:18). Women's teaching is about understanding the root causes of the global environmental crisis and how power relations pervade families, societies, nations and the global political and economic system. These power relations form peoples attitudes and beliefs, and behaviours and vice versa. Hausler (1993: 84) notes that power "is closely connected with the production of knowledge", who has it and who does not. She also suggests that power and knowledge come together in discourse, one of the fundamentals of women's ways of working. Feminist Popular education seeks to redefine notions of power by putting the emphasis of the learning process on the knowledge and daily experiences of the participant, particularly the women. This way of educating can be seen as transformative because it seeks to bring women and other marginalized peoples into the circle of what constitutes knowledge and begin with their daily experiences which have so often been ignored. In environmental action, these educative techniques work to reveal how environmental problems are extensions of the ordinary everyday relationships between men and women, humans and nature. Transformative learning can create an atmosphere in which men and women can come together as equals in a deeper understanding of the complexities of power, domination and control. Transformative learning is about unlearning destructive and oppressive beliefs, attitudes and practices which pertain to both women and other oppressed groups as well as the natural world.

Learning which is transformative addresses the links between women's practical daily needs and their strategic political needs. Neither of these can be adequately met without a move toward greater gender equality in control of resources, and decisions which affect their lives. Women educators have "drawn out the specific ways in which learning is gendered. Women's centrality to any discussion of community and family transformations mean that any broader conceptualizing around transformative learning needs to draw extensively from these sources" (Ba 1993). Transformative learning focuses on the personal and the political. Women's popular education sees personal empowerment as key to political action. Therefore, the educative work begins with organizing and teaching at the local level or at home around a specific environmental and/or social problems, drawing the basis for discussions from the participants themselves. It then moves to the larger political arena, to discuss relations of power and control, mobilizing women and men to act against oppression for themselves and the natural world which sustains their lives. The impact of people's local actions has a multiplier effect as was seen in the Brazilian case study.

The Chipko movement in India had a strong global impact and has proved to be a catalyst for other actions. The Clayoquot Sound struggles draw from the Chipko women, and their organizing around one small forest at the edge of the country has had a major impact on European markets as well as government policy at home. Feminist transformative learning is about rediscovering oneself and the power to act. Often people find the power within themselves to move from being afraid of unjust laws and systems to the freedom of standing up for what one believes.

Through transformative learning processes women make the links between humans and nature, environmental and social issues. They also make links between the micro oppression of men over women and the macro of the powerful North and more powerful classes over the less powerful South and lower classes. Environmental struggles are about people's right to live in dignity and natural world's life to exist. Transformative learning is about a greater understanding and respect for nature and human life and making the connections. Walking through the wilderness draws attention to the difference between life and death. Creating organic gardens which are community owned bring a greater respect for the diversity of the natural world and its link to health, economic benefit, future of the community, children and entire countries. Transformative learning is about organizing locally, nationally and globally to draw a clearer picture of the interconnectedness of the world: the interconnectedness of humans and nature as well as the interconnectedness of the global structures which foster environmental exploitation, manipulation and destruction. Women work together with men to protect existing ecosystems, and recreate and rebuild others. The cumulative weight of small, individual efforts coupled with global action and networking can make a difference (Durning 1990).

## 8. Conclusions

That the earth is in a major crisis which threatens all life and the human species will need to act quickly and creatively to reverse the situation. It is becoming more clear to many people that this crisis is the product of educational, developmental, economic and structural policies as well as beliefs and attitudes which disregard or totally ignore the important skills and knowledge of the vast majority of the world's people, particularly women, and exploit the natural resources around the world. In their struggle for survival, many women have begun to challenge the must fundamental categories of oppression, a key element of which is believed to be patriarchy which manifested itself long before capitalism. They begin by looking at the oppression of men over women and make the links with other types of oppression. Women are speaking out and acting in such ways as to ensure that any discussions on the environment or society take into account the issue of male dominance and power.

The women's movement is undergoing dynamic change at the international level. While substantive changes in women's lives over the last twenty-five years in terms of their economic, political and social conditions have not changed, the global women's movement has greatly matured and become more politically involved. Around the world, women are working in a strategic, focused manner, targeting issues of deep concern with a global framework and using a multifaceted examination of issues.

Women are active agents of social change, Over the past few decades thousands of women are responding to the global environmental crisis by spearheading action initiatives and developing education methodologies which emphasize inclusiveness, non-violence, local community action, personal empowerment and gender equality. Feminist popular education in different parts is being used as a critical tool to change attitudes and behaviours and promote action. Women have challenged and re-defined the andropocentric aspects of formal and popular education which have excluded women and their particular needs. Modified versions of this type of education includes women's needs, concerns, and a gender approach to support personal development and promote political action.

The types of practices women use include consensus-building, open, fully participatory dialogue, life affirming actions, inclusiveness, song, dance, drawing, theatre, developing educational materials, spiritual circles, non-violent campaigns, blockades and protests. As teachers, communicators and educators, women are introducing their expertise, spirituality and understanding of the environment into the larger domain of what constitutes knowledge.

Literature shows that women around the world suffer more from the effects of environmental degradation because they are both the producers and reproducers in life. Their efforts range from small-scale initiatives to national protection of seeds, biological diversity and natural resources. Through their work and education, they make the links between environmental and social issues, showing that both people and the natural world have the right to exist.

Women are the backbone of almost every environmental group and movement around the world but their knowledge, skills, approaches and critical roles and perspectives are still consistently marginalized and undervalued. However, they have become adept educators, communicators, organizers and activists. Their practices and methods work to empower those involved in the action and assist in the transformation of ways of thinking and acting. In the words of Vandana Shiva (1989):

> women are creating an ideology that transcends gender, and a political practice that is humanly inclusive; they are challenging patriarchy's ideological claim to universalism not with another universalizing tendency but with diversity; and they are challenging the dominant concepts of power as violence with the alternative of non-violence as power (pp 274).

Women environmental educators have "raised environmental issues with a feminine touch" (Rodda 1992:104). Although their ways of working and educating may not be the only answer to the environmental crisis, it is a critical component which cannot be ignored. "Their knowledge should at some point become crucial to the survival of the ecosystems in which they have been living (Braidotti et al 1994:115).

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TRANSFORMATIVE LEARNING THROUGH
ENVIRONMENTAL ACTION

RESEARCH PROJECT

# Food for Thought and Sustenance

by

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## Working Paper Series

These working papers are an integral part of the Transformative Learning Through Environmental Action Project funded by the International Development Research Centre (IDRC). The papers represent ideas in process.

We invite comments, reactions and suggestions to these papers. These papers are those of the authors and do not necessarily represent the position of the Transformative Learning Centre.

# FOOD FOR THOUGHT AND SUSTENANCE

## FOOD

*Food is not matter*
*but the heart of matter,*
*the flesh and blood of*
*rock and water, earth and sun.*

*Food is not a commodity*
*which price can capture,*
*but exacting effort, carefully sustained,*
*the life work of countless*
*beings.*

*With this cooking I enter*
*the heart of matter,*
*I enter the intimate activity*
*which makes dreams materialize.*

Edward Espe Brown

## FOREWORD

This paper is one in a series of working papers developed for the IDRC sponsored project entitled "Transformative Learning Through Environmental Action", with primary participation from Moema Viezzer of Rede Mulher, Sao Paulo, Brazil; Budd Hall, Darlene Clover and Edmund Sullivan of the Transformative Learning Centre, OISE, University of Toronto, Canada, and Leesa Fawcett, Faculty of Environmental Studies, York University, Canada.

The foundation for this project is built upon the group's working description of transformative learning:

> *The study understands transformative learning as a process of learning, whether formal, non-formal or informal which begins with the daily lived experiences of women and men living in communities and is linked to changing the root causes of environmental destruction or damage. Transformative learning relates personal and structural perspectives and seeks understanding of relationships of power and knowledge. It is also concerned with knowing ourselves as a mammalian species trying to live more lightly, cooperatively and creatively in the biosphere. Learning implies dynamic, life-long processes of discovering and re-discovering what we know about nature, and how we teach and learn from one another within our*

*differing environments.*

(Hall & Sullivan, 1994)

I am writing this paper to contribute some of my thoughts and reflections to the conversations we began at the international workshop on transformative learning and food production. I am doing this in the spirit of continuing and enriching the cross- cultural dialogues we have begun. This paper explores the working group's specific focus on food production, consumption and distribution with an emphasis on maintaining biodiversity and bioregionalism, and waking up "sleepy knowledges" (Ovalles, 1994) alive in our various communities.

## INTRODUCTION

I am careful about the words I pick. Words can be artforms, they can be weapons; they can also be used as much more subtle forms of power over people. My intent is to begin to make power together. Only I cannot see your faces, nor your bodies which enliven your experiences. So I write this working paper as an act of faith to be translated between languages and meanings, lives and cultures; as a way for us to begin talking about food, the land, the living and ourselves.

One act we do, hopefully everyday, is eat. We need food for sustenance; to sustain ourselves, our livelihoods, our communities, and to nourish our bodies, our souls and our dreams. In this working paper, I want to talk about food consumption, production and distribution. I intend to take the maintenance of high **physical and cultural biodiversity** and the practice of **bioregionalism** as guides for sustainable and successful food practices. This cannot be done successfully without talking about human bodies and senses, without rejuvenating "sleepy knowledge".

Sleepy knowledge, a wonderfully descriptive phrase coined by Omar Ovalles, refers to the indigenous knowledge asleep in our consciousness, knowledge which is often not permitted to be awake and active; traditional bioregional knowledge which is locked away by societal strictures. Bioregionalism is the practice and theory of living sustainably as much as possible within one's bio-physical region and understanding the central importance of biological and cultural interdependencies linked to the land itself. The idea of rejuvenating sleepy knowledge in a bioregional way is a disruptive hegemonic act in itself, it means we would trust our communities to feed us, and not have to rely so heavily on the global corporate marketplace. In fact in the North, when I think about our indigenous knowledge about the land and how to feed ourselves it looks like "sleepy knowledge", but it feels more like "drugged knowledge", ways of knowing drugged into oblivion by our consumer lifestyle addictions.

The term biodiversity is now a politically and culturally loaded phrase with many implications. I will rely on Vandana Shiva's who has said that biodiversity conservation is:

> *... inspired by the deep green ethos of the democracy of all life ... biodiversity conservation takes on the significance of a struggle for self-reliance and decentralization. Diversity in this perspective needs to be incorporated into the logic of production processes in forestry and agriculture because diversity protects the livelihood niches of different communities.*
>
> (Shiva, 1991, p.43-44)

There are innumerable ways of **situating** ourselves in terms of understanding the complexities of human relationships to food. I mean "situating" in the way that Donna Haraway uses the word when she talks about "situated knowledges": where she means physical bodies full of knowledge and experience, that are located somewhere in particular, (in contrast to scientific objectivity and the impartial observer who is everywhere and nowhere at once).[1] In order to focus my discussion I will be concentrating on agricultural food and not food obtained from hunting and fishing.

Haraway emphasizes situating our knowledges of the world, because as she says the "only way to find a larger vision is to be somewhere in particular." In order to organize for social change we need to join:

> *... the partial views and halting voices into a collective subject position that promises a vision of the means of ongoing finite embodiment, of living within limits and contradictions, ie., of views from somewhere.*
> *...So location is about vulnerability; location resists the politics of closure, finality ... feminist objectivity resists simplification in the last instance. This is because feminist embodiment resists fixation and is insatiably curious about the webs of differential positioning.* (Haraway, 1991, p.196)

Being insatiably curious myself, the perspective I am taking draws on a long tradition of encouraging **critical thinking and action** within feminist and critical pedagogy, socially critical environmental education, global education and popular education. Ecofeminism or ecological feminism, with all its contradictions and flaws still gives me helpful perspectives on the links between the oppression of nature and the oppression of women and children.[2] All these approaches to learning combine historically to make the connections visible between environmental education, popular and human rights education, development education and peace education.

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[1] I have been practicing organic farming in a humble way for over 15 years, and I feel quite physically and intellectually located and committed to the food I grow and the small piece of the earth I work with.

[2] For a fuller discussion of ecofeminism see Darlene Clover's working paper on "Gender, Transformative Learning and Environmental Action", 1994, OISE.

As Moema Viezzer has written:

> *Non-sexist education and environmental education are two sides to the same proposal for social relations between human beings and with nature in resistance to violence and brutality and in the construction of new possibilities to struggle for quality of life for all.*
>
> (1994, p.1)

For instance, when I think about **food** I am concerned about sustenance, biodiversity and environmental health, civil, and political rights, global development and interdependencies, and the quest for peace. These are all mutually inclusive and interwoven, they should not be simplified.

Lester Brown states in the 1993 State of the World Report that agriculture is the most vulnerable major economic sector because it is so directly interdependent on natural systems. To be **environmentally mindful** of food means we ground our understanding and analysis of food production and distribution in the ecological, economic, socio-political and spiritual bases of resource extraction and commodity production. This paper is about placing ourselves, our land and our foods in relation to the sustainability of our locations environmentally, culturally and politically.

## WE ARE WHAT WE EAT

If we think of ourselves as members of life on Earth, or as Aldo Leopold called us all 'just plain citizens of the Biosphere', we identify ourselves as social mammals, living, breathing beings made up of intricately organized cells cooperating together. As Lynne Margulis says humans are "products of cellular cooperation."

All cells on Earth whether we are talking about a one-celled Amoeba or a multi-celled animal like ourselves generate energy either by food consumption, photosynthesis, or chemosynthesis. No matter what we are doing - working, sleeping, playing, we require energy. The quality and quantity of our food gives us our energy, nutrients and directs our lives.

The environments that we live in grow the foods that nourish our bodies and our souls. External environments, outside our bodies, eventually enter our bodies and are within us. We are literally what we eat, the outer and the inner merge.

> *Everything we are, or have, or will have, ultimately comes from the sun and earth. The earth can get along without us, but we can't get along without the earth. ... The bottom line is that the earth is the bottom line* (Tyler-Miller, 1990, p.2-3)

Human diets and the nutritional content of each diet vary tremendously from one culture to another. Helen Caldicott speaks passionately about the high levels of malnutrition in the world and the fact that over 40,0000 children die daily from starvation-related diseases. She argues that in many affluent countries, America for example, the majority of people have to deal with obesity or overnutrition; and at the same time, in 1985, in the economically wealthy United States, 12 million children and 8 million adults were malnourished due to inappropriate or inadequate food levels.

## PROBLEM DEFINITION

The problem is not that we don't have enough food. World food production is currently above the levels needed to support the world population (Merchant, 1992). The world food supply is actually growing faster than the world population. The problem is food is not evenly distributed. In Africa, there are large numbers of starving peoples while the United States has large food surpluses. A growing number of researchers realize that most people do not starve because we cannot produce enough food to feed everyone; people starve because of the **politics and economics of food distribution** (Orr, 1992).

> *Since recorded time, food has been about state-building and about wealth. Rulers have justified the centralization of power through promises of protection, not only against hostile attacks but also against famine. A major way to centralize power is to centralize control over land and labour, and the most direct link between land and labour is food.*
>
> (Friedmann, 1993)

Access to food is one of the key problems in food distribution. The increasing poverty of women, known as the "feminization of poverty", means that many women cannot gain access to adequate food to feed themselves and their children. Daly and Muirhead (1993), state that in Canada "more than 4 in 10 families headed by women are below the poverty line, compared to 1 in 10 headed by men." Jane Pryer (1990) discusses how the feminization of poverty in the countryside of Bangladesh led to more and more rural women migrating into the cities to struggle against hunger in Bangladesh slums. Access to food then is marked by gender and class inequalities in rural and urban settings in both the North and the South.

## BIODIVERSITY: THREATS FROM BIOTECHNOLOGY & IMPERIALISM

Biological diversity or biodiversity is one way of talking about the wondrous variety of species, of all living things (microorganisms, plants, animals) on our planet. As E.O. Wilson says, "the most wonderful mystery of life may well be the means by which it created so much diversity from so little physical matter" (1993,p.35). Diversity can expand tremendously when evolution occurs rapidly and a new species is born. If as Wilson states a new species can evolve in one to several generations, given the appropriate conditions, why do we worry about species extinction and the loss of biodiversity? Wilson replies, " The answer is that new species are usually cheap species."

> *Great biological diversity takes long stretches of geological time and the accumulation of large reservoirs of unique genes. The richest ecosystems build slowly, over millions of years. A panda or a sequoia represents a magnitude of evolution that comes along only rarely. It takes a stroke of luck and a long period of probing, experimentation and failure.* ***Such a creation is part of deep history, and the planet does not have the means nor we the time to see it repeated.***
>
> (Wilson,1993,p.74)

Humans have drastically narrowed the genetic diversity of species and altered complex ecosystems into monocultures. Estimates are that 80% of the world's food supply is provided by less than 2 dozen species of animals and plants. The advent of the modern uniform market economy has replaced diverse traditional economies while assuring a concentration on fewer plant varieties with longer shelf lives. Just as biodiversity is a part of "deep history" so is the culturally sleepy knowledge communities have about their bioregions and how to feed themselves; both these types of riches need to be conserved and passed on.

In the indigenous Andean diet for example, potatoes were a mainstay with over 12 varieties of potatoes available. Today there is one potato variety only and it is imported from the United States. This is a classic example of the impoverishment of the potato gene pool and the diet of the Andean people (Weismantel, 1992); they lost indigenous knowledge and bioregional food resources. Currently, the countries of the South contain the vast majority of the world's biological diversity (in terms of plant and animal life) and yet the Northern countries possess most of the world's capacity for biotechnology.

The biotechnology industry is a major threat to biodiversity and to the preservation and promotion of traditional and indigenous agricultural practices that sustain biodiversity and livelihoods. As Jack Kloppenburg has accurately noted:

> *the World Resources Institute has suggested that genetic resources may well be the oil of the Information Age. And like oil, biotic diversity is unevenly distributed throughout the world. Indeed, genetic resources are even more highly concentrated in the Third World than is oil.*
>
> (Kloppenburg, 1990, p.104)

In 1962, a wild tomato variety (Lycopersicon chomrelewskii) was taken from Peru and used and altered biologically to increase the content of soluble solids in the American tomato processing industry. This tomato from Peru contributed $8 million dollars a year to American agribusiness! **None** of these profits have been shared with Peru, the original home of the genetic material and bioregional home of the Peruvian farmers who tended this tomato over time. The social and biological injustice of taking a wild species from the South, claiming it as part of the "common heritage of humanity" and then proceeding to hoard, patent and sell it as the private property of Northern corporations is self-evident.

Given that 3/4 of the plants used in prescription drugs were originally discovered because of their use in traditional medicine it is all the more alarming that the labour of Third world farmers is given no value while the inventions of western scientists are flaunted as adding value (Shiva, 1991; Kloppenburg, 1990).

> *... it is recognized that the 'total genetic change achieved by farmers over the millennia was far greater than that achieved by the last hundred or 2 hundred years of science-based effort'. ... This utility of farmers' and tribals' seeds has high social and ecological value, even if it has no market value attached to it.*
>
> (Shiva, 1991, p.57)

Vandana Shiva succinctly articulates how new quick fix biotechnological developments in seeds make the new commoditised seed ecologically incomplete:

*1) It does not reproduce itself. ... Through technological transformation, biodiversity is transformed from a renewable into a non-renewable resource.*
*2) It does not* **produce** *by itself. It needs the help of chemical inputs to produce. As the seed and chemical companies merge, the dependence on inputs will increase, not decrease.*
(Shiva, 1991, p.51-52)

One of the key ways to resist the colonial disruption of traditional agriculture is to stop the undermining of indigenous food systems and to encourage bioregional interdependencies, as the case studies in this project have amply demonstrated.[3] In particular, the "in-situ" conservation work of Vanaja Ramprasad and colleagues involved in the Navdanya (9 Seeds) campaign are exemplary. Their close attention to the conservation of biodiversity and the politics of seeds, and their concerted efforts to protect Third World natural resources and indigenous knowledge from intellectual piracy by the West is precedent setting. [4]

## WHO BENEFITS? AGRIBUSINESS

The term "agribusiness" is used to describe contemporary agricultural practices in the western world. After World War II there was a dramatic increase in the mechanization of agriculture. Many people (most prominently government officials and the monetary and intellectual elite) have heralded the rise of agribusiness and the increase in the mechanization of agriculture as a "triumph of technology" (Mitchell, 1975).

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[3]. See the case study papers by Marta Benevides (El Salvador), Naila Babiker Hizaji (Sudan), Omar Ovalles (Venezuela), Elisabeth Meyer-Renschhausen (Germany), Teresa Moreira (Brasil), Vanaja Ramprasad (India), Jose Zarate (Six Nations, Canada).

[4]. The Navdanya team has produced 2 excellent resource books, entitled "Cultivating Diversity" 1993; and "Sustaining Diversity" 1994; plus there is the 1993 book entitled, "Intellectual Piracy and the Neem Patents." All three are published by the Research Foundation For Science, Technology and Natural Resource Policy, 105, Rajpur Road, Dehra Dun - 248 001 (U.P.) India.

The accompanying rise of multinational agribusiness conglomerates and the increasing reliance on new expensive technologies has resulted in the demise of the small or "family" farm. Wendell Berry, in his book "The Unsettling of America", argues that the increase in urbanization and the specialization of labour that has resulted from the introduction of new agricultural technologies has created a physical and moral gulf between people and the earth.

The increase in the use of heavy machinery and technological innovations has made agribusiness an increasingly energy consuming and polluting industry (Pim,1981; Mott,1987; Robbins,1987). Amory Lovins, a United States energy consultant, estimates that industrial agriculture consumes three times as many calories as it provides in food value: ten times if you factor in the energy used in food processing and distribution.

Even given the intensive use of synthetic chemical fertilizers and pesticides, agribusiness still leads to soil degradation and diminished productivity. Environmental problems associated with agribusiness include:

* Soil erosion and land degradation - loss of topsoil,
    aggravated by overgrazing, clearcutting, overcultivation, intense irrigation & conventional methods of land preparation
* Loss of water resources - decrease in water tables, pollution * Loss of soil productivity - nutrients, organic levels, destruction of soil ecosystem - compaction, synthetic chemical pesticides
* Loss of biodiversity - of plants, seed species, soil organisms
* Deforestation
* Toxic residues on food
* Toxic contamination of fish and wildlife
* Salination
* Acidification - acid rain, acidic lakes
* Contributing to destruction of ozone layer and global warming - use of fossil fuels for food transportation.

## WHO PAYS? PESTICIDES - THE CIRCLE OF POISONS

Contemporary agricultural practices in the North are characterized by an intensive use of synthetic chemical pesticides. Many of these human-made chemicals were formulated in World War II as methods of chemical warfare and are by their very nature toxic. Synthetic chemical pesticides - herbicides, insecticides, and fungicides - are used in conventional agriculture to fight weeds, insects and fungus and to decrease the growing and ripening time of the crops. Pesticides are largely non-renewable, unsustainable products as 80% of them are made from petroleum.

Unfortunately, the deadly effects of pesticides are rarely limited to the target organisms. Pesticides are highly persistent chemicals which are able to travel through air, land and water and remain toxic for long periods of time. For example, the pesticide known as DDT (dichloro-diphenyl-trichloro-ethane) has been banned in Canada for 20 years and yet levels of DDT are still detectable in the breast milk of Canadian mothers.

Although DDT was banned in Canada in 1977 because of its health risks, it is still used in many developing countries. Many of the banned pesticides are sold to countries in the South whom we in turn import food from - so the circle of poisoning is complete. The instructions for pesticide use and application are usually based on temperate climates and are often not applicable to tropical climates. The American Food and Drug Administration tested 12,000 domestic food samples and found 38% of the produce contained high pesticide residues. They also tested 8,000 samples of imported produce and found that 64% of the samples contained high pesticide residues.

The United States exports half of its pesticides to Central America; 75% of them banned for use in the United States and Canada because of the health and environmental hazards associated with them. About **25 million pesticide poisonings** are reported worldwide every year, many of them in Southern hemisphere countries where there is little education about pesticide toxicity or danger.

Despite this knowledge the use and sale of pesticides has increased dramatically; between 1971 and 1981 total pesticide sales increased from $57 million to $700 million. Canada spent $745 million dollars on 6,000 different pesticides in 1987 which amounted to an increase of 50% in the past 10 years (Suzuki,1989). What is all the more startling is that crop losses due to pests were greater in 1990 than in 1940 when pesticides were first used.

Although some pesticides can be broken down by human metabolism and then excreted, other pesticides such as organochlorine insecticides **bioaccumulate** in body tissues. These insecticides are easily absorbed in fatty tissues, accumulating in the flesh of animals, fish and humans. When we eat farther up in the food chain we are eating a more concentrated dose of pesticides; we are actually eating a lifetime of pesticide accumulation from that particular animal.

Pesticides are known to cause cancers, produce birth defects, decrease sperm activity, depress the immune system, cause cellular mutations and alter brain activity. For example, 99% of American mothers' milk contained significant levels of DDT. Chlorinated hydrocarbon pesticides, including dioxin, DDT, etc. are major contributors to sterility and sperm count reduction in males. In 1950, 0.5% of male college students were sterile whereas in 1978, 25% of them were sterile. In British Columbia, Canada, pesticide research showed that 55% of the farm workers had been directly sprayed, 80% had no choice but to eat lunch in sprayed fields, and 50% reported continual dizziness and headaches (Robbins, 1987).

## SUSTAINABLE AGRICULTURE: STRATEGIES FOR RESISTANCE AND HOPE

Key questions to ask ourselves are: How does one resist the corporate mechanization of food production and distribution? And how does one resist the increasing moral distancing between ourselves and our food sources?

Historically, in the Southern hemisphere there is a long standing tradition of successful and enduring acts of resistance to unsustainable agriculture. The recorded history of the famous women's Chipko movement in India began 300 years ago when more than 300 members of the Bishnoi community in Rajastan, led by Amrita Devi, clung to their sacred kherji trees in order to save them and in so doing sacrificed their own lives (Bishnoi in Shiva, 1989).

The current Chipko movement, led by hill women in India, began in direct resistance to the colonial exploitation of India's forests and the concurrent destruction of women's knowledge and expertise in forestry. Founded on the non-violent premise of saving trees by embracing them, planting ecologically appropriate trees and setting up local co-operatives, the Chipko movement spread through the decentralized leadership of local women.

In the 1950's, Sarala Behn, a close disciple of Gandhi's, started an ashram for the education of Himalayan hill women to help them realize they were not "beasts of burden, but goddesses of wealth since they rear cattle and produce food, performing 98% of all labour in farming and animal husbandry." (Shiva, 1989,p.70) In her 75th year of life, Sarala Behn wrote:

> *From my childhood experience I have known that law is not just; that the principles that govern humanity are higher than those that govern the state; that a centralised government indifferent to its people, is a cruel joke in governance; that a split between the private and the public ethic is the source of misery, injustice and exploitation in society. Each child in India understands that bread (roti) is not just a right of the one who has money in his pocket. It is a more fundamental right of the one whose stomach is hungry. This concept of rights*

> *works within the family, but is shed at the societal level. Then the ethics of the market reigns, and men get trapped in it.*
>
> (Behn in Shiva, 1989,p.71-72)

A recent Canadian example of direct, non-violent resistance is the ecofeminist peace camp organized around the impending logging of one of Canada's last rainforests in Clayoquot Sound, British Columbia. [5]

In acts of successful resistance, the United Farm Workers (UFW) of America, led a boycott on Californian table grapes in order to focus attention on environmental health and just working conditions for farm labourers. The farm labourers were mostly Chicano women with a long history of being an exploited immigrant labour force. The UFW was campaigning to get DDT out of the fields and off the food. Farm workers are like the canaries in the mines - they are the indicators of the level of toxicity of pesticides. Miscarriages among female farmworkers are 7 times higher than the national American average. There are central Californian towns where the cancer rate among children clusters at over 1,200 times the normal rate. As Ellen O'Loughlin says, "Farm workers' lives and bodies demonstrate the interconnections of ecology and social justice that ecofeminism seeks to understand."

The UFW grape boycott was worker led and organized, not consumer driven, which is an important difference because being worker led meant the boycott was organized by the people whose livelihoods and children were most directly effected. Then, I, as a consumer who is more indirectly effected had the choice to join the boycott in solidarity with the farm workers.

As O'Louglin (1993) outlines, the boycott asked consumers not to buy Californian table grapes until the growers agreed to:

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[5] For a fuller description of the Clayoquot case study in particular see Clover, 1994 in this series.

1) eliminate dangerous pesticides from all grape fields,
2) establish a joint testing program for poisonous substances sold in supermarkets,
3) free and fair elections for farmworkers,
4) good faith collective bargaining in the grape industry.

The UFW boycott was successful in attaining the above conditions and it exemplifies one way of organizing for social and environmental change. This boycott situated the workers and the consumers knowledge and showed the connections between workers in the fields, consumers in the stores and children in their neighbourhoods.

## PRAXIS AND VISIONS OF SUSTAINABLE AGRICULTURE

To resist without a vision is exhausting and eventually fruitless. In many instances the vision is dormant, unused after years of neglect or erosion like the indigenous knowledge of many peoples about their food sources. The vision needed then is in part, a re:awakening of "sleepy knowledge".

In the North, where the drive emanating from the "centres of capitalist patriarchy has deepened the ecological and survival crises" (Shiva, 1989, p.xix) almost beyond vision, I find hope in the growing movements of organic gardening, community shared agriculture and permaculture. All of these forms of sustainable agriculture share an understanding that agriculture conducted as "business" may maximize profits in the short-term but it minimizes the sustainability of people's livelihoods and homes - it destroys the soil, farm communities and biological diversity integral to a place.

Wendell Berry likens good farming to an intimate and on-going conversation, not a business.

> *In a conversation, you always expect a reply. And if you honour the* ***otherness*** *of the other party, you understand that you must not expect always to receive a reply that you foresee or a reply you like. A conversation is immitigable two-sided and always to some degree mysterious, it requires good faith.*
>
> (Berry, 1981,p.)

Keeping the metaphor of **agriculture as conversation**, the contemporary practices of agriculture - the tools, techniques, and technologies - need to be reviewed, revised and replaced in certain situations as Orr (1992) points out. Practices of sustainable agriculture rely primarily on biological control methods rather than synthetic chemical solutions. For example, in order to control insect predation on crops, sustainable farming uses a variety of methods such as early harvesting, companion planting, and farm designs to encourage bird habitat.

Sustainable agriculture shares the following basic criteria:

* The entire system should produce more energy than it consumes.
* Soil should not be lost. Techniques used should save and create soil.
* Nutrients should be cycled.
* The food needs of a region should be met locally, as much as possible (tenet of bioregional movement).
* The system should not be dependent on synthetic chemical inputs.

## WAYS TO GROW COMMUNITY SUSTAINABLE AGRICULTURE

Based on Orr's (1992) proposals, I have selected and adapted four approaches that communities can use to grow towards sustainable agriculture. I would like to briefly outline and discuss these four approaches in this last section. The four approaches are:

1. To reframe food in the web of culture, morality and spirituality.
2. To recognize that the entire food system is in disorder.
3. To enact drastic changes in farm policies.
4. To alter farm design, using approaches like permaculture.

The first approach is to consider **food in the web of culture, morality and spirituality**. When we learn to value farmers, farming and growing food again as primary and integral to our survival we will have woven food back into the fabric of our lives. Wendell Berry believes that the solutions to a wasteful and disintegrating agricultural system will not result from more government programs or research but instead depend on the moral and cultural changes which encourage farmers to "knowingly, lovingly, skilfully and reverently" do their work.

Afterall, "Food is not matter but the heart of matter, the flesh and blood of rock and water, earth and sun." (Espe Brown). Beyond the ethical valuing of growing food is the moral question of which foods should be grown and for whom. Elisabeth Meyer-Renschhausen in a succinct and insightful review of Wirz's book on the world history of vegetarianism, discusses John Kellog one of the great proponents of vegetarianism.

> *Through his ideas, Kellog was also questioning the morality of a form of society in which certain people enjoyed their meat at the expense of others: women and the poor. (p.171) From the humeral theories of Antiquity on, women had been assigned a more vegetable and sweet diet, and men a meatier one, a concept which held through 2000 years of history.*
>
> (Meyer-Renschhausen, 1994, p.3)

Here the roles of transformative learning (with an explicit feminist agenda), popular education and environmental education are vivid - for communities to refocus their attention on sustainable food production and consumption.

As Brewster Kneen's (1989) brilliant analysis of the global food system traces food stuffs from the Canadian family farm to the global marketplace, he asks questions of moral justice in light of the continual occurrence of unevenly distributed global wealth. He argues that the costs of relying on a corporate marketplace have been extraordinarily high.

> *The affluent lifestyle of the average North American, the achievements of science and technology, the glories of military might, and the phenomenal overproduction of food have all been premised on the deprivation of the majority of the human population and the exploitation of natural resources.*
>
> (Kneen, 1989, p.106)

It is not enough to consider local ethics and food justice anymore as the global food system has woven us all together inextricably. The UNICEF report on the "Status of the World's Children 1989" says:

> *Among the public in the industrialized world, it is still widely believed that money is flowing from rich nations to poor nations to assist in the struggle against poverty. ... Taking everything into account - loans, aid, repayments of interest and capital - the southern world is now transferring at least $20- billion a year to the northern hemisphere.*
>
> (UNICEF, 1989,p.15)

Poverty and malnutrition are just two of the extraordinarily high costs of this net drain of wealth from the indebted countries of the South to the industrialized rich of the North.

> *For almost nine hundred million people, approximately one sixth of mankind, the march of progress has now become a retreat ...After decades of steady economic advance, large areas of the world are sliding backwards into poverty.*
>
> (UNICEF, 1989,p.15)

As Naila Hijazi said, in the workshop, when discussing desertification and hunger in Sudan "No country is underdeveloped by nature, historical conditions make countries poor."

The second approach to bring us closer to sustainable agriculture is to recognize that the **entire food system is in disorder**, including farmers, processors, wholesalers, retailers and consumers. This vast food system relies on energy expensive long distance transport, economic concentration of capital, and high energy-guzzling technologies. Consequently the system is neither efficient, economic nor aesthetically pleasing.

The Rodale organization in the United States has proposed the development of local and regional markets that: 1) allow consumers to choose locally grown, organic, quality food;

2) provide farmers with profitable local markets, getting rid of middlemen - retailers and food brokers; and 3) reduce the costs and vulnerabilities attached to processing and long-distance transport of foods. The work of Jose Zarate from the Six Nations Community, Canada on the Indian Foods of the Americas Cooperative and the design of a farmers market, and also the case study by Elisabeth Meyer-Renschhausen on the Bio-shops in Berlin, Germany are excellent examples of social change for sustainable food production and distribution.

The third approach to attaining sustainable food systems proposes **drastic changes in farm policies**. Marty Strange argues that the problem is not due to a lack in cultural understanding or system design, but is caused by public policies that encourage over-production, absentee ownership, and the substitution of labour for capital. He proposes the following changes in farm policy:

1) Allow farmers to pay for farmland by farming it well, and by no other means;
2) Reward farmers for good farming;
3) Eliminate all other motives other than farming for owning farmland.

With a global policy perspective Brewster Kneen argues that, in Canada, where we have a socialized medicare system based on universal access we should have a similar policy advocating universal access to nutrition.

> *For a start, it ought to be possible for anyone who is ill because they are malnourished to get a prescription for food, just as they would get a prescription for a drug if that was what they needed. If such an idea seems utopian, ask the drug companies if they think prescribing drugs under medicare is a bad idea.*
> (Kneen, 1989, p.156)

Kneen who is a powerful advocate of organic farming says this would encourage the production of healthy organic food and "just as we have found it necessary to protect the public interest by legislating standards for drugs, we could also legislate standards for food quality." (p.157)

The fourth approach to attaining sustainable agriculture is to **alter farm design** - by changing farm structure, size, techniques and energy uses. **Permaculture**, the development of permanent agricultural systems of self-perpetuating (perennial) intensive polycultures, is by far one of the most thorough visions and practices of sustainable farming available. The word "permaculture" was coined by the Australian, Bill Mollison, to describe a radical approach to agricultural design. It is the conscious use of ecological and indigenous principles in designing self-sustaining food, fibre and energy reproducing ecosystems.

The idea is to set up systems for human use that are sustainable because they learn from natural ecosystems the use of diversity (of species and activities), interdependence, recycling, conservation, and perennial plants (especially trees) to produce a stable and self-reliant system. Permaculture is about designing a literally permanent culture within which a variety of techniques can be used: organic growing and pest control; forest farming; free-range animal raising; technology for energy conservation and solar energy; and recycling of wastes. What is critical is that all of the different elements are consciously designed to create an intricate web of inter-relationships that is both stable and high-yielding. The concept of permaculture has been applied successfully in both urban and rural areas using local bioregional knowledge .

The key elements of a permaculture design are:

- Emphasis on perennial rather than annual crops;
- Wild or little selected species are integral elements;
- Combinations of diverse activities - gardening, farming, poultry, aquaculture, tree and shrub planting, etc.;
- Recycling of all materials;
- High species diversity, often with close plantings;
- Use of three-dimensional space - trees, shrubs, vines, and low growing plants using different levels of soil and light, and increasing total yield;
- Minimum tillage;
- Use of small scale machinery and hand tools;

- Layout minimizing walking and transportation; and
- Close relationship between land usage and climatic features and the location and design of buildings and their uses.
- Long-term - an evolutionary process spanning generations.

The philosophy behind permaculture is one of working with, rather than against nature. It involves protracted and thoughtful observation rather than protected and thoughtless, mechanized action. It entails looking at systems in their myriad functions, rather than asking only one yield of them; mostly it involves long, intimate conversations between the land and the farmers.

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TRANSFORMATIVE LEARNING THROUGH
ENVIRONMENTAL ACTION

RESEARCH PROJECT

# ANNOTATED BIBLIOGRAPHY
# TRANSFORMATIVE LEARNING THROUGH ENVIRONMENTAL ACTION RESEARCH PROJECT

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## Working Paper Series

These working papers are an integral part of the Transformative Learning Through Environmental Action Project funded by the International Development Research Centre (IDRC). The papers represent ideas in process.

We invite comments, reactions and suggestions to these papers. These papers are those of the authors and do not necessarily represent the position of the Transformative Learning Centre.

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# TRANSFORMATIVE LEARNING THROUGH ENVIRONMENTAL ACTION RESEARCH PROJECT

## INTRODUCTION

This collection reflects the themes which were put forward in the three working papers for the IDRC-funded "Transformative Learning Through Environmental Action" project.
It is the first annotated collection of the experience, theory and practice of grass roots popular environmental education, popular education, women's popular and environmental education, women and environmental practices, ecofeminism, international environmental politics, policies and structures, Indigenous environmental teachings, food production, consumption and distribution, women in agriculture, organic and sustainable agriculture and biodiversity.

In all, there are 92 annotations contained in this paper. Listings include conference proceedings, seminar reports, teaching resources such as handbooks and manuals, scholarly documents and books, newsletter, magazine and journal articles, a video, essays and unpublished papers. Although the majority of the documents sited are in English, others, particularly those in reference to popular education, are available only in Spanish.

The bibliography reflects in print form, activities in popular education, feminist/women's popular education and teaching, transformative learning, indigenous teachings, environmental education and action, international environmental policies, structures and politics, ecofeminism, women and agriculture and organic and sustainable agriculture.

Materials cover such topics as the ideologies of ecofeminism; the role, practices, techniques, methodologies, and goals of popular education and transformative learning; theories of popular education and transformative learning; women's challenges to popular education; women's ways of knowing, being, teaching and communicating; feminist popular education; roles women play in the global environmental arena; concepts of the "feminine principle"; organizing locally, regionally and globally to protect the environment; the relationship between learning and power; indigenous knowledge, teachings and practices; organic and sustainable farming practices; women in global politics; global gender issues; how politics, structural adjustment policies and the military affect the environment.

This bibliography is a resource which will be beneficial to environmental popular adult educators, popular educators, adult educators, university students, environmentalists, feminists, teachers and professors. In short, all those interested in looking at how transformative learning manifests itself in the field of environment and how women and others marginalized peoples are caring for and shaping the world's environments.

# ANNOTATED BIBLIOGRAPHY

## Part A: Education

### Feminism/Women and Education

Ba N'Diaye, Soukeyna and Karimou Moussoulimou "Theory and Practice of Popular Education" in Voices Rising, (1) 1993

This report from the workshop of the women's program of the International Council for Adult Education held in Cape Town, South Africa gives suggestions how to run popular education workshops with an emphasis on gender issues. Suggestions include: establish a theoretical base which looks at the sexual division of labour; discuss with participants how and where male and female roles in society are learned; encourage people to talk about and feel comfortable with sexuality; and look at women's rights and roles in politics and structures. The report also outlines popular education, how it can empower women, and what the differences are between popular education and community education.

Bishop, Anne (1988) "Cartoons and Soap Operas: Popular Education in a Nova Scotia Fish Plant" in Convergence 21(4): pp 27-32.

Bishop describes oppressive working conditions in the Nova Scotia fish plant in which the employees were underpaid women working long hours in unhealthy, unsafe conditions. The seasonal job was the only opportunity for paid work in the region for most of the women. Two workers began forming a chapter of the fish processor's union in the plant and, despite intimidation from the company owners, most of the employees approved the idea in an official vote. The author describes how, after this action, owners made working conditions worse and used various tactics to make the employees suspicious of and disappointed with the union. She also reflects on how difficult it was for the union to meet with women in the plant since meetings were not allowed on company premises and after work women had no time because of family responsibilities at home as wives and mothers. One chapter outlines the various steps taken which began by circulating a newsletter to the women which contained single-panel cartoons to characterize the relationship between the owners and the workers by an ongoing "soap opera"-type story about women working in a fish plant - a format very familiar to the women who regularly watched the television soaps during off-season. These measures encouraged everyone to discuss the conditions of their oppression as they related to the stories and cartoons. In the true Freirian tradition, their education eventually lead to action - first of all through support for the union, and then, as the plant went bankrupt and closed, they organized to form worker coops to give themselves employment.

Gaskell, Jane and Arlene McLaren (1987) Women and Education, Calgary: Detselig Enterprises Ltd.

This publication is a compilation of various women writers who explore the relationship between feminist research and education. The preface notes that although feminism has meant different things to different people, it has always insisted on the importance of gender: "Men and women do not live in 'separate but equal' spheres. What women do is valued and rewarded less than what men do." The book is divided into four major sections, whose themes draw attention to how feminist work has changed how we view education. Section one examines the study of teachers and mothers, those who are ultimately responsible for much of children's education, stressing the distinctive contributions of these people as women. The second section contrasts educational achievements of men and women, particularly, how schools perpetuate gender inequality through regulating access to skills, credentials, and ultimately the labour market. Section three examines "what counts as knowledge" and how women's experiences have been excluded from and misrepresented in curriculum. Section four focuses on adult women's non-formal education and training, and outlines future directions to promote gender equality in all learning institutions.

International Council for Adult Education Voices Rising: A Bulletin About Women and Popular Education, Published bi-annually in Toronto

These newsletters provide the most current issues facing women working in the field of popular education around the world. As a networking tool, editions illustrate women's experiences and practices, put forward challenges women have to popular education, provide information on resources, manuals and upcoming conferences, seminars and workshops, call for papers on a variety of feminist popular education issues, provides articles to foster the development of a feminist practice in popular education.

Latin American Council for Adult Education (1987) Crecer Juntas: Mujeres, Feminismo y Educación Popular en America Latina y El Caribe. Santiago: Isis International

This publication illustrates the growing phenomenon of women participating and organizing within the popular sector into vitalized movements of basic needs and defense of the quality of life. Women from around Latin America and the Caribbean here join together to discuss their own experiences vis-a-vis the organizing and training of grassroots women. They discuss the ways in which the popular education processes in which grassroots women are involved raise their consciousness about the societies in which they live so that they can understand and challenge a system which is incapable of satisfying or, at times, even recognizing their particular needs. The authors define these processes as a coming together of the feminist and popular education movements. The women talk about the obstacles which they have faced, and how each woman emphatically prioritized the contradiction of class or the contradiction of gender. They point out how women working in popular education programmes have been preoccupied in how to incorporate the variable of gender into their work as much as the feminist movement has tried to articulate the contradiction of class and gender. (In Spanish)

Mackenzie, Liz (1992) Our Own Feet: Taking Steps to Challenge Women's Oppression, a handbook on gender and popular education workshops. Cape Town: CACE Publications.

This handbook focuses on the steps taken by women who challenge gender oppression and how they worked together to build solidarity with one another. It is a learning tool for community, adult and popular educators, organizers, facilitators and teachers. The handbook is based on three workshops held by the Centre for Adult and Continuing Education (CACE). The topics respectively addressed include: (1) some background understanding of terms used; (2) reports from the Talking Gender workshops, highlighting the everyday experiences of women living in southern Africa; and (3) exercises to help develop understanding and strategies for action. Chapter one outlines key concepts and terms regarding gender, and chapter two gives examples of where and how women's oppression happens around the world. Chapter three introduces popular education and its main principles. Chapters four and five offer practical ideas, and guidelines to facilitate workshops. Chapters six through nine provide background information on group building, exercises and activities for workshops.

Red Mujer y CEAAL Seminar report "Seminario Sobre Educación Popular y Feminismo, Uruguay, October 1988

This report compiles key elements of discussions at a 1988 popular education and feminism seminar in Uruguay. Chapter one profiles some organizations and programs vis a vis the principle characteristics of women educators' work experience within them; gives a synthesis of some of the key theories of the place and role of women; and outlines methodologies which woman use in the popular education work. Chapter two evaluates the seminar's first session, then looks at pedagogical processes used with women's groups, describes personal feminist discoveries, and outlines some of the problems and obstacles which women face in doing popular education. This chapter concludes with an evaluation and reflections on the whole seminar.

Viezzer, Moema "El desarrollo del feminismo y la educación popular en america latina y el caribe". Seminario Latinoamericano sobre educación popular y feminismo de CEAAL, Montevideo, 1-6 de diciembre de 1986

In her presentation at the Popular Education and Feminism seminar in Uruguay, Moema Viezzer outlines her definition of popular education as a theoretical and methodological process which supports the hegemony of oppressed and exploited groups. She links the particulars with the general and daily life with a historic plan in a transformative perspective, through strategies that articulate the restraints, varieties and steps of the educative process. She discusses the changes which have taken place over the past 15 years, how women have come to be involved in the advancement of the popular movement in the region and how, through their participation, they have come to understand themselves as citizens, members of the oppressed of society as well as an integral part of the working class. Many women also began to discover the contradictions of gender both within the home as well as within the popular institutions and organizations to which they belong. Viezzer outlines the different types of feminisms, noting that "neither in theory or in practice have we developed a hegemonic focus of feminism." The paper goes on to define the concepts of popular education that feminists incorporate into their theory and practice and their goals for analysis and action, and challenges popular education to use a gender perspective.

Weiler, Kathleen (1988) Women Teaching for Change: Gender, Class and Power. South Hadley: Begin & Garvey Publishers, Inc.

Women Teaching for Change challenges accepted critical educational and feminist theories, and reveals the day-to-day struggles and achievements of feminist teachers who encourage their students to become more politically conscious and aware of social forces which shape their lives. Chapter one "Critical Education Theory" looks at the role of schools as apparatuses of social reproduction and advocates awareness about the "relationship of schools to the wider society and to recognize the realities of class and gender relationships in terms of power and control." This chapter outlines the ways in which schools have promoted stereotypes of women, excluded them from history textbooks and steered women towards some courses and curricula and away from others. Chapter two uses a feminist analysis to look at gender and schooling, and Chapter three builds upon the work of feminist theorists who have created a feminist methodology and epistemology. Chapter four looks at the power of sexist practices and ideology to influence college and career choices for women. Chapter five "The Struggle for a Critical Pedagogy" looks at the structural and institutional forces which hinder putting feminist ideals into practice. The final chapter looks at the issues of gender, race and class within the feminist classroom as a place to become conscious of the "realities of various forms of oppression and the realities of intersecting and conflicting forms of power."

Yanz, Linda "The Feminist Challenge to Adult Education" in Voices Rising, May 1988

This article begins by looking at the dichotomy between women from the First and Third Worlds and the different ways in which they view their own political realities and struggles. Many Third World women believe that they should work within popular social and national liberation movements, and that gender and class oppression are integrally interwoven. Popular education is suggested as an essential tool in the work which all these women do because it takes the standpoint of the oppressed, links immediate issues with broader social struggles, and moves from personal and lived experience to political understanding. However, the article also notes that "women's experience within popular education has not been problem-free." Popular education has tended to reinforce oppressive gender stereotypes rather than acknowledge gender differences, and tended to silence women. It instead needs to "see the importance of integrating gender issues into all questions." The feminist struggle is to see that a gender perspective is incorporated into all aspects of the popular education movement.

## Transformative Learning/Popular Education

al-Yahya, Abdul-Razzak (1990) "Popular Education and the Reinforcement of Democracy", Literacy, Popular Education and Democracy: Building the Movement. Toronto: International Council for Adult Education

This paper argues that popular education enables various sectors of the people to take part in developing democracy itself. It works to create awareness among the people of their rights and supplies them with the necessary tools to demand those rights. Al-Yahya outlines some of the challenges which Palestine has faced and their problems with illiteracy. He discusses the various concepts which Palestinian popular education apply in their struggles and the peoples' belief in the role which popular education plays in the development of a democratic society.

Arnold, Rick and Bev Burke (1983) A Popular Education Handbook: An Educational Experience from Central America and Adapted to the Canadian Context. Toronto: CUSO Development Education and OISE Publishing

The handbook's first section defines popular education and lists its characteristics; outlines the history of this learning process; and outlines what is needed to plan a popular education programme, by describing the methodology as well as the role of the popular educator. Chapter two gives workshop examples which can be used as a starting point and adapted to any number of situations. Chapter three looks at the various tools or techniques which can be used to build a popular education programme: sculpturing, socio-drama, role playing, drawing and song writing. Chapter four outlines various exercises which can be used within a program of popular education to encourage maximum participation. The final chapter dispels fears of technology and shows how it can be used, simply and cheaply, to produce teaching tools such as videos, slide tapes, and audio cassettes. This handbook moreover is an example of a popular style of writing: clear, concise and filled with cartoons, photographs, tables, and drawings.

Aronowitz, S., & Giroux, H. A. (1991) Postmodern Education Minnesota: University of Minnesota Press.

This book demonstrates how postmodernism can be used to solve educational crises, and situates the role of postmodernism within the area of educational criticism. In this book, Aronowitz and Giroux continue the debate they started in Education under Siege by discussing the roles of class, race, and gender in educational politics, as well as in the politics of literacy. They suggest postmodernism reformulate the relationship between intellectuals and those who speak for the broader culture, and asks the reader to question the relations between the centre and the margins of power. The authors vis a vis postmodernism address issues such as, curriculum, student voice, popular culture, textual authority, and knowledge.

Barndt, D. (1991) To Change this House: Popular Education Under the Sandinistas. Toronto: The Doris Marshall Institute for Education and Action; The Jesuit Centre for Social Faith and Justice; Between the Lines.

This illustrated volume introduces readers to the popular education effort in Nicaragua with photographs of the people, places, and processes pursued in the effort. The book discusses the concept of popular education and brings it to life, while outlining the role that it played in the Nicaraguan revolution. It describes the history of intervention, public education in Nicaragua after 1979, and the literacy crusade and adult education. It also explores training in popular communication, the National Health Campaigns, and the role of women in this process. Finally, it looks at the training of community workers, and education in Christian-based communities. The book believes in the use of popular education to change a house founded on "the political and economic system of industrial capitalism" with its walls between the rich and the poor. It does not look to further liberal humanistic techniques to reform the education system, but instead calls for taking apart the structures of injustice.

Berry, Thomas (1988) The Dream of the Earth, San Francisco: Sierra Club Books

Author Father Thomas Berry is an American monk and preeminent eco-theologian who calls for a "new story of the universe." This book is the first volume in a Sierra Club series on nature and natural philosophy. Berry cautions against the human preoccupation with a "technological wonderworld", and writes: "The greatest support for the feminist, anti-patriarchal movement can be found in the ecological movement." He challenges misguided assumptions that privilege one theology over another, instead identifying the merits within various spiritual teachings from Taoism and Buddhism to Native American beliefs. Berry also argues, however, that the re-establishment of ancient creation stories is not enough to move humanity beyond its autism (lack of consciousness). While he critiques traditional western sciences that have been limited to an investigation of the universe's physical dimensions, he at the same time looks to more recent scientific approaches, such as quantum physics, as an essential component to create a "new story" that can heal an afflicted planet. Moreover, he espouses human recognition of the universe's psychic dimensions, pointing out that therein (rather than the manmade scriptures) resides the context to understand our place in God's creation.

Carpenter, Christine "The Experience of Spinal Cord Injury as Transformative Learning" in Proceedings of the 11th Annual Conference of CASAE. Saskatoon: University of Saskatchewan, 1992

Carpenter is a physiotherapist working with people with spinal cord injuries. She looks at such injuries as "a significant life event" which involves "a whole range of uniquely personal, social and economic factors." The author outlines a qualitative research approach chosen as the most appropriate to explore the "individual conceptions of the phenomenon of spinal cord injury." Carpenter groups the findings of her research into three themes: rediscovering self, redefining disability and establishing a new identity. This innovative process of learning, she believes, is premised on the adult's ability to make meaning of an experience. Furthermore, she believes that an integral part of self-reflective learning is action and "[a]ction resulting from self-reflective learning is emancipatory." The author outlines the three domains of learning. The first is instrumental learning or task-oriented problem solving; the second is communicative learning which is grounded in social interaction and communication with others; and the third is transformative learning which demands the total engagement of people as integrated wholes. "Transformative learning is concerned with the development of self-knowledge through critical reflection...[which] differentiates transformative learning from other types of learning."

Filson, Glen, ed. (1991) A Political Economy of Adult Education in Nigeria. Ibadan: Ibadan University Press

This book examines the interconnectedness of politics and economics in relation to adult education in present day Nigeria. The team of four authors did a study of the government of Nigeria's nonformal education, sponsored by Bayero University in Nigeria. The study was based on hundreds of interviews via questionnaires with adult education policy makers, administrators, teachers, and students within Nigeria's government and non-governmental organizations. The book includes the questionnaires and describes the methods of data collection. The evolution of Nigerian adult education is explored in relation to various levels of Nigeria's state apparatus. The present condition of adult education in three Nigerian states is reviewed and analyzed. The authors also provide some insights about the activities of the federal mass mobilization agency, MAMSER. Nigeria's economy and class structures are outlined with focus on issues of gender and adult education, pointing out that Nigerian women are disadvantaged in both formal and non-formal education sectors.

Freire, P. (1993) Pedagogy of the City New York: The Continuum Publishing Company.

Paulo Freire here speaks from his role as Secretary of Education for the city of Sao Paulo, Brazil. In a compilation of interviews he explains the imperative need to transform schooling so that it is dynamic and responsive. He provides an action plan therein that leads toward a more democratic system of education in which assessment and grades are replaced by a curriculum composed of students' life experiences and creativity. Freire argues that such a system is crucial to reform a society into one in which all individuals have the freedom to create knowledge from their own experiences. He believes that in order to accomplish this, it is necessary to give more autonomy to local schools. Freire develops these ideas by discussing the deficits of Brazilian education, the challenges of urban education, and the need for youth and adult literacy.

Freire, Paulo and Donaldo Macedo (1987) Literacy - Reading the Word and the World. New York: Bergin and Garvey

This book extends the ideas of other works written by Freire on literacy. Authors Freire and Macedo attempt to redefine the interconnections between literacy, culture and education, to provide a better understanding of the meaning of literacy vis a vis popular education. Here, the examination of principles of critical consciousness and the pedagogy of knowing highlight, for example, how we never just "see" something, but that we always see it with respect to something else. By being able to codify life through literacy, people are able to recognize elements in their world, and as a result are able to view their world more objectively. This form of recognition is a key theme throughout the publication. Another theme which emerges is that of reinvention, specifically the reinvention of power. For example, Freire believes that teachers must have authority but not be authoritarian. Three of the chapters are written as dialogues between Freire and Macedo, mirroring the authors' own belief that learning should take place in dialogues rather than lectures. They believe that teachers should learn from students through dialoguing. These discussions highlight the significance of dignity in dialogue, and illuminate Freire's character and struggles. The book examines literacy in the United States, the literacy program in Guinea-Bissau with which Freire assisted, and Freire's literacy approach in the curriculum and literacy materials used in Sao Tome and Principe. The authors give insight into the politics of illiteracy and link it to cultural hegemony, oppression, and certain forms of resistance. The book's theoretical and practical notions evoke a tone of hope and possibility.

Freire, Paulo (1972) Pedagogy of the Oppressed. London: Penguin Books

In Pedagogy of the Oppressed, Paulo Freire speaks out for the Third World and underprivileged people. He states the purpose of a pedagogy for the oppressed and explains how the disparity between the oppressors and the oppressed can be overcome through a process of mutual liberation. An educational system in which teachers teach passive students is an instrument of oppression. For Freire, education should be a mutual process which liberates both teacher and student by using dialogue. Freire lobbies for the use of dialogics, which are characterized by cooperation, unity, organization, and cultural synthesis, rather than conquest, 'divide and rule' reasoning, manipulation, and cultural invasion. Moreover, he points out how men differ from animals. Freire sees literacy as a tool to create social change, and education as a means by which people can transform the world and liberate themselves. He provides us with a description of the role of the oppressed in revolutionary action.

GATT FLY (1983) Ah-Hah!: a new approach to popular education Toronto: Between The Lines Publishing

This publication outlines the methods used by GATT-FLY in their Ah-Hah Seminars, an educational process of empowerment that makes participants aware of how the political, social and economic systems effects their individual experiences and lives. The term "Ah-Hah" is used because it is the word which colloquial English speakers exclaim "when they understand clearly for the first time something that they knew before in a partial or confused way." Among the themes discussed are the role of the animator and recorder and the development of action strategies. Three case studies using this method are outlined. The aim of the manual is to show individuals that once they have a basic understanding of the system they can then begin to analyze its effectiveness and take actions to achieve social justice.

Hall, Budd and Edmund Sullivan (1994) "Transformative Learning: Contexts and Practices, Transformative Learning Centre, OISE, Toronto (unpublished)

The first part of this series working paper begins by defining the term transformative learning and providing a cultural historical analysis of transformative moments in history. In addition, it looks at transformation as a process of moving between visions and the role of learning in transitional periods. The second part focuses on the role of formal, non-formal and informal learning within context of environmental action vis-a-vis the production, distribution and consumption of food and the maintenance of biodiversity. It outlines sixteen principles of transformative learning from the Citizen's Treaty on Environmental Education for Sustainable Societies developed during the Earth Summit in Rio de Janeiro, 1992. The paper concludes by listing eight characteristics of transformative learning and raising more questions on criteria, materials and effectiveness of transformative learning methods.

Hope, Anne and Sally Timmel (1984) Training for Transformation: Community Workers Handbook. Gweru: Mambo Press

This three-part handbook provides practitioners, educators and community workers with some tools to help people shape their own lives. Specifically, it looks at different methods of training for social transformation, combining reflection and action in a clear and simple manner. Part One discusses the theory of Paul Freire on developing critical awareness and how to put this theory into practice. Part Two focuses on the skills necessary for participatory education, the need for people to gain self-confidence and to value their own thinking. Part Three deals with the social analysis necessary to develop critical awareness and long-term planning and the steps needed for building solidarity in peoples' movements.

Horton, Myles and Paulo Freire (1990) We Make the Road by Walking: Conversations on Education and Social Change. Philadelphia: Temple University Press

This book is a dialogue between Myles Horton and Paulo Freire about pedagogy, social criticism, and collective struggle. It discusses problems faced by educators who are concerned with linking participatory education to the practice of liberation and social change. Horton and Freire "speak a book" as their conversations are recorded on audiotape, and later transcribed and edited. The two men first discuss why they decided to embark on this venture and their approach to do so. They then discuss their youths, families, other memories and their respective cultures.

Although Horton and Freire have experienced such different social contexts, they share a very similar theory and vision of education: They both deeply believe in the use of participatory education to empower the oppressed. They address whether education can be neutral, how the concept of authority fits into their thinking and practice, and give opinions on charismatic leadership and also on the differences between educating and organizing. They look at the educator, the role of intervention in the learning experiences of others, theory and practice in adult learning, and also the nature of social change and empowerment. In addition to discussing their views on theoretical questions, the two men relate aspects of their work in communities, workshops and classrooms, in different cultural settings. Through stories and anecdotes Myles and Paulo relate their struggles to change systems from the inside rather than the outside, as well as cite examples from Latin America and North America. They end the dialogue by looking back at the people, the literature, and the events which influenced their thinking and their work.

Jesuit Centre for Social Faith and Justice (1989) Naming the Moment: Political Analysis for Action. Toronto: Jesuit Centre for Social Faith and Justice

This manual provides community organizations with a methodology to analyze their actions in order to achieve social change in their particular fields. Chapter one elaborates on the process of political analysis for action called "naming the moment", here defined as "a rigorous examination of the balance of social forces in a given moment that can help us, acting in ways to advance our long and short term goals." Chapter two reviews the history of the concept and situates the practice in current social movements in Canada. The methodology is described in detail and supported by two case studies in chapters three and four. The final chapter suggests various ways in which groups and communities can integrate the naming the moment process into the daily of life of their organization. It also emphasizes the importance of linking analyses across issues and across group and community sectors.

Leonard, Peter and McLaren, Peter, ed. (1993) Paulo Freire: A Critical Encounter. London and New York: Routledge

The editors' introduction acknowledges the contribution of Freire's writings in "the central political project of our time" which they name as: "how to struggle for the social transformation of our postmodern and postcolonial world in the interests of the liberation of subordinate populations and cultures from the structures and ideologies that dominate them." The scholars in this book who critique Friere therefore "stand on the same side of the political struggle" as Friere while they examine his contribution's strengths and limitations from their respective sites of struggle. The scholars include: Stanley Aronowitz, Henry A. Giroux, bell hooks, Colin Lankshear, Peter Leonard, Donaldo Macedo, Peter McLaren, Ira Shor, Tomaz Tadeu da Silva, Carlos Alberto Torres and Cornel West (who writes the foreword). They present a diversity of critical positions ranging from Afro-American feminist bell hooks to postmodernism and poststructuralism. As well, Giroux among others speaks to the danger of Friere's work being appropriated by those western intellectuals who are grounded in a colonialist or post-colonialist perspective. Chapters by the respective scholars reflect the editors' ambivalence when they cite the "negative lesson of much of postmodern writing", that is, "it's inaccessibility" by "obscurity of language" while in the same breath arguing that the political struggle for new social conditions "invite and sometimes demand new and difficult vocabularies of meaning."

Nuñez, Carlos (1985) Educar para Transformar, Transformar para Educar, Gudalajara: IMDEC

In this publication, Nuñez explores the dialectical thought difference between what he terms the natural reality that humans can change and transform and the social reality (economic, political, cultural and ideological) which can be revolutionary and transformed by humans because it is a reality that s/he produces. He argues that the dialectic "is not a method of reduction, but of reproduction of the conscience and organization and struggle with the people pushing for necessary changes in order to occupy a protagonist's place in the building of a new society and new self." To Nuñez, popular education means a new political and historic human ethic which is an integral part to the "humanization movement of a world in crisis." Chapters focus on: popular education as a key expression of the popular process and as a liberating force; the methodologies of popular education and working from the grassroots; and also the pedagogical and didactic aspects of popular education. Nuñez also defines the role of the facilitator or educator within the process as well as the language of popular education because language is a manifestation of culture. (In Spanish)

Park, Peter et al. (1993) Voices of Change, Participatory Research in the United States and Canada. Toronto: OISE Press

Voices of Change focuses on transformative community actions that evolve from participatory research, a process "which supports the voices from the margins in speaking, analysing, building alliances, and taking action." The process, writes editor Budd Hall, is "about the right to speak" and "part of the resistance to colonial or neocolonial research practices." The chapters describe specific projects in which a role for university-based researchers is shown not as at the centre of the process but instead "in the margins, in the communities with women, with people of colour, and so forth." The book's usefulness resides not only in step-by-step descriptions of diverse projects by respective university researchers, but moreover in their honest identification of a project's limitations and errors in judgement or assumptions from which readers can learn. Project examples range from several USA communities where citizens gathered environmental health data to expose the irresponsibility of scientific experts, to demand greater health protection, to engaging disabled citizens in strategies to have wider access to public spaces, helping formerly battered women gain more self confidence, exploring Canadian aboriginal leadership's achievements and flaws in its political movement, and examining the need to create wider democratic participation in the production of knowledge to counter the growing tendency of elite ownership of knowledge. The book's further premise, that university researchers must phase themselves out of their job in order for other participants to take control over their own lives, is powerfully illustrated in a chapter on North Bonneville, USA. Here, local citizens worked in partnership with university students to challenge successfully the US Army Corp of Engineers and the government in selecting and designing a new town site according to communal needs rather than according to the criteria and regulations initially dictated by the outsider institutions.

Pike, Graham, and Selby, David (1988) Global Teacher, Global Learner, London, Sydney, Auckland, Toronto: Hodder and Stoughton

This book is a practical guide for teachers and students combining theory and hands-on exercises, that address global education within the context of an interdependent world system, and describing methods for constructive critique of the status quo that transcend partisan politics. Four sections respectively focus on the: global learner, global classroom, global curriculum and global teacher. The Selby/Pike approach advocates four dimensions and five goals of learning. The dimensions include: the spatial (how the local connects to the global); the temporal (knowing the past and present to consider the future); the study of key global issues; and the inner/holistic potential of the individual learner. The goals develop the learner's consciousness in five interconnected aspects: systems thinking, perspectives (to acknowledge divergent world views), health of planet, involvement, and preparedness and process mindedness. The curriculum section suggests ways that current school subject areas can adapt a global approach, and the classroom section describes how to do a variety of experiential activities that include simulations, role plays, enhancing self esteem, and feedback techniques.

Plowman, Edward W., Thomas, Alan, ed. (1986) Learning and Development, A Global Perspective. Toronto: Symposium Series/15, OISE Press

The authors' diverse models open up conventional notions about "learning" and education in and beyond schools. The book's second, and interconnected, message is to recognize the merits of educational models grounded within respective cultures and to understand why the imposition of the Western model upon other cultures is inappropriate. Cultural examples provided by some authors include Albert Tevoedjre's focus on 'South-South' cooperation regarding agriculture, traditional medicines and inexpensive environmentally-suitable housing. L.G. Hewage challenges the 'East-West' dichotomy and outlines the Buddhist concepts for education, while Sri Lankan writer A.T. Ariyartne describes the Buddhist-oriented Sarvodaya Shramadana movement that encompasses all aspects of learning and living. Francis M. Deng presents the traditional Dinka concepts of knowledge and learning and how these can be combined today with the knowledge and realities of the larger world. Madame Li Li, Director of Workers' and Peasants' Educational Development in Shanghai, explains the focus on adult education linked both "to production and the progress of society." Luis Alberto Machado, formerly Minister of State for the Development of Human Intelligence in the Venezuelan government, identifies how multi-linked programmes develop cognitive skills and creativity in school children. Other authors provide theoretical frameworks for global learning. Edward T. Hall distinguishes between 'low context' and 'high context' cultures which embody different learning styles. Majid Tehranian identifies two global trends 'transnationalism' and 'tribalization' and how these are interlinked with communications, democracy and development. Kenneth E. Boulding views two levels of human knowledge and learning as "the level of consciousness and reflection" and "the level of physiology" while Peter Holland suggests animal behaviour study has relevance to human global learning paths. Jorge Glusberg believes individuals must be made aware how their material and ecological environments influence their learning. Peter Montagnon outlines the merits of Britain's Open University partly based upon the use of television and radio to reach students not engaged in formal education. Donald A. Schon challenges "technical rationality" as the tendency of "professional knowledge" which de-legitimizes other ways of acquiring knowledge. Rex Nettleford elaborates on "the process of discovery" in combining an exploration of historical experience within one's cultural roots while also equally accepting "discreet knowledge rooted in the experience of peoples from all parts of the globe."

Reed, David (1981) Education for Building a People's Movement. Boston: South End Press

This publication's stated purpose is "to empower people." The author identifies four basic principles to develop an empowering and transforming social education: "using learners' values and social interests to determine the purpose, direction and character of the learning process; making the social practice of the learners the basic content of the study process; linking the learners' practice to the historical development of society; and drawing on lessons and experiences of other progressive groups to improve learners' practice." The chapters describe the background of social unrest; develop the idea of creating new social knowledge; provide a case study on rebuilding a militant housing movement in which the aspects of a supportive process are defined; and outline how to structure a training programme to confront elitism in international solidarity work. The book concludes that evaluation in social pedagogy requires more than "judging the weaknesses and strengths of the learning process." Evaluation also must look at the learning process as a political act, understanding the relationship between this learning process and the contradictions in society.

Sang bagsak: Popular na edukasyon (1989) Manila: Philippine Peasant Institute

This comprehensive manual is written from the experience of the Philippine Peasant Institute. It discusses the role of education in society as a starting point in understanding the concept of popular education and gives an analysis of popular education in general. The manual outlines the necessary preparations for training as well as techniques in handling discussions based on the culture and traditions of the surrounding countryside.

Snyder, G. (1974) Turtle Island. New York: New Directions Publishing Corporation

This book of poetry and poetic prose communicates the significance of nature and the diversity of life forms on the planet. The writings relate how, today, the inhabitants of Turtle Island, a (Native American) mythic name for North America, have forgotten how intertwined and interconnected the life forces on the planet are, and have begun to destroy them with technology. Snyder calls upon all peoples of the planet to return to living in harmony with the natural world. He asks us to really examine what is happening to the earth and to bring about change through social and political action.

The Answers are in the Villages Bangkok: The Department of Non-Formal Education, 1986

This collection of experiences and case studies is derived from the Hill Areas Education Project, whose aim was to ensure community participation in various activities from planning through implementation to evaluation. The publication begins with the history, philosophy, goals and objectives of the project. Some of the case studies put an emphasis on transferring classroom learning into practice, "where it begins to affect their way of life" and therefore the learning becomes much more relevant. Others illustrate various problem-solving activities such as rice banks, cooperative stores, medicine banks, and water supply systems. All case studies are evaluated in terms of what worked or not, and why.

Vio Grossi, Francisco ed. (1988) Educación popular, sociedad civil y desarrollo alternativo. Santiago: Consejo de Educación de Adultos en América Latina (CEAAL)

The ten papers in this book focus on popular education in Latin America. The first chapter by Francisco Vio Grossi outlines the definitions and roles of adult education in Latin America, beginning with the notion that "adult education is unity and diversity at the same time". Other chapters examine: the role of popular education in creating and determining alternative development models; the politics and civil society; and also the political functions of social movements. The essays present some emerging alternatives to the currently failing economic and social models, and how popular education can play a role.

Part B: Environmental Issues

## Women and the Environment

Canadian Woman Studies, "Women and the Environment", North York: York University, Volume 13, Number 3, Spring 1993

The chorus of voices in this issue of Canadian Woman Studies focus on the various elements of the global environmental crisis and the roles which women play within it. Contributors include Vandana Shiva, an outstanding academic/grassroots activist who explores the biotechnological revolution which is attempting to control the reproductive powers of both nature and women in her essay entitled "The Seed and the Earth: The Colonization of Regeneration". Ana Isla from Peru looks at the links between women, development and the market economy, and puts forward the debt crisis in Latin America as an example of unsustainable development due primarily to the International Monetary Fund's structural adjustment policies. Nakanyike Musisi, a professor of women's studies at the University of Toronto outlines a history of the unequal gender relations in Buganda, and Eva Johnson shares an "Open Letter" on indigenous cultures' profound link to the environment. Other topics include Innu women's struggle in northern Canada against low-level flight testing over their lands; and the implications to women's health of structural adjustment policies in Nigeria. A section entitled "Women's Activism" looks at efforts to stop the logging in Clayoquot Sound as well as the role of children in fighting environmental degradation in the Himalayas. A section on poetry, and reviews of various books conclude this very informative and challenging journal edition.

Carson, Rachel (1962) Silent Spring, Boston: Houghton Mifflin Company

Carson is the most influential women in the field of ecology in this century. Silent Spring details for the average reader the dangers inherent in chemical pesticides, herbicides and fertilizers. Carson talks about the lack of concern for the public shown by both business and government, who in many instances were willing to use the public as unknowing guinea pigs to prove whether a particular chemical was carcinogenic or health destroying. The public is also held accountable for the carelessness in the handling of these dangerous chemicals which they apply to crops without reading labels. This often results in greatly increased quantities of chemicals over what is recommended. This book should be mandatory reading for every highschool and university student regardless of sex and course selection.

Dankelman, Irene, and Davidson, Joan, ed. (1988) Women and Environment in the Third World, Alliance for the Future, London: Earthscan Publications Ltd; The International Union for Conservation of Nature and Natural Resources (IUCN)

Twenty-two women contributors join the editors in a rigorous overview of the direct experiences of women globally as providers and protectors of nature's life support systems. Case studies from different continents illustrate the importance and effectiveness of outside organizations helping women to organize themselves in community-based groups and to implement culturally appropriate technologies that are environmentally suitable. The goals are not just to meet basic life support needs but, moreover, to develop the confidence and abilities of women and children otherwise victimized by oversights in longstanding economic development and cultural decisions. This excellent reference book reveals the parallels of women's experience in traditional societies worldwide in which their primary roles as "invisible water managers" and providers of fuel, food and fodder too often are undervalued and, worse, undermined, to cause, ultimately, unnecessary disease, malnutrition and death. The book's first section Women, Environment and Natural Resources relates many stories of women who live at the centre of water, food and energy crises. Here, destructive attitudes and practices are identified as well as how the women struggle to overcome their particular life-threatening situation. The second section Women and Environmental Conservation includes interviews with women environmental activists in India, Brazil and Zambia and further explains how women increasingly are being heard as they gain self awareness and self determination in connecting conservation with family planning and promotion of appropriate technology.

DiPerna, Paula "Truth vs. 'Facts'" in Ms. II(2) 1991: pp 20-26

The article begins with the brief story of one woman who became environmentally active after her child died of leukaemia. Anne Anderson suspected foul tap water was the common thread between the death of her child and others in the area. DiPerna states that women understand that environmentalism is an issue of humanity much more than an issue of science. She examines the fact that women who are environmentally active do not see a healthy planet as a luxury but as a "basic human necessity." The article also points out that despite a new consciousness on global warming, toxic waste, ozone depletion and contaminated drinking water, millions of acres of land per year are turned to desert, diversity is depleted, and eco-warfare rages. DiPerna believes it is because "clear-cut links between cause and effect are elusive" in many cases and therefore remedies are easily evaded. The author identifies the work of many women around the world such as 'Iguana Mama' Dagmar Werner who uses iguanas to stem the flow of 'slash and burn' forestry in Costa Rica; Wangari Maathai, founder and leader of Kenya's Greenbelt reforestation movement; Maureen Jones, who warned of impending danger in the Exxon Valdez disaster; Marilyn Waring, who in her book If Women Counted showed how the world's accounting systems ignored work performed by women and nature; and countless other local and global initiatives which women have undertaken. DiPerna concludes by noting that the "environment is not a special interest, but the single common interest, and as such acquires unique political and moral force". She believes that if this force were put into the hands of women, it "could be the light of the next century."

Durning, Alan B "Environmentalism South", The Amicus Journal 12.3 (1990): pg. 12 - 18

In this article, Durning, a senior researcher with the Worldwatch Institute in Washington, D.C., states that in much of the Third World "women are the backbone of community movements. As the hewers and haulers of wood, they know most directly what environmental deterioration means, and therefore have the most to gain from organizing." He describes a new generation of national, community and grass-roots women's environmental organizations which are growing stronger and more powerful. Within a relatively short length of time, women have become efficient local and global networkers and robust political activists. He describes how the Chipko movement in India went beyond resource protection to ecological management, conservation, restoration and to what its members call "eco-development." Although most of the world's hundreds of local women's movements for resource protection never draw the international attention which Chipko did, Durning argues they have become extremely adept at behind-the-scenes' linking to women's movements, organizations and institutions in the North through which they can obtain funds, educative materials, and a forum for the exchange of ideas, practices, hopes and defeats. He also outlines grass-roots organizations such as the Greenbelt movement of Kenya, and others from Asia and South America which put valuable time and energy into the conservation of natural resources and re-building of the land.

Griffin, Susan (1980) Women and Nature: The Roaring Inside Her. New York; Cambridge; Philadelphia; San Francisco; London; Mexico City; Sao Paulo; Singapore; Sydney: Harper & Row Publishers

"Women and Nature is about memory and mutilation, female anger as power, and female presence as a transforming force." One of the strongest critiques put by the author of patriarchal thought, is its claim to objectivity remaining separate from emotion which is considered weak and inferior. Book One entitled "Matter" traces patriarchy's judgements about the nature of matter or the nature of nature and its opinions and views of women and nature throughout history. It explores the notion of control through harnessed winds, domesticated horses, talking mules, how land is shaped for use, and the use of women's bodies as the keystone of patriarchal ideology. The second book, "Separation", is a protest against all the separations which are part of the civilized "male's" thinking and living such as culture/nature, etc.. The author explores this through the elements of male control, knowledge, vigilance, power certainty and secrets. Book three called "Passage" separates consciousness from the consciousness of patriarchy which leads to book four: "Her Vision" which is a vision of re-seeing the world. "The Separate Rejoined", the final section, looks at mystery, dreams, possibility, clarity and transformation.

Plant Judith (1993) "Revaluing Home: Feminism and Bioregionalism". Home! A Bioregional Reader Van Adruss, Plant, Plant, and Wright (eds) Vancouver: New Society Publishers (pp. 21-23)

The basic premise of this essay is that the notion of home or "place" has been undervalued and has been a very isolated place particularly for women. Therefore, to change this situation, home needs understanding, valuing and redefining. Plant argues that a partnership between feminism and bioregionalism could be "fertile ground for deep societal changes" because bioregionalism alone will not bring about a shift in attitude required for a ecologically harmonious life. The author also examines the idea of whether revaluing the home will not double women's bind and what can be done to ensure that men and women come together, with integrity and dignity in a bioregional community.

Rodda, Annabel (1991) Women and the Environment. London: Zed Books Ltd.

This book focuses on the importance of women in relation to environment and development. It focuses on how women in developing countries and how their relationship to the environment is vital to their basic needs. Rodda describes the various roles of women as collectors and as carriers of fuel, food, fodder, and water, as well as consumers, producers, workers, farmers, and managers. She also identifies the various effects of rural and urban environmental degradation.

Chapter four is the central focus of the publication, looking at women as agents of change and the influential forces which they are becoming. Although women bear the brunt of environmental degradation they are not passive recipients of this fate but play a very crucial role in environmental management and resistance against the destruction of the environment within their communities and around their regions. The author looks at the critical roles which women play as educators, communicators and environmentalists. She cites case studies such as the Chipko movement in India, and the Greenbelt women's movement in Kenya to illustrate the resilience and strength of women.

Rodriquez, Regina and Lezak Shallat (1993) Despejando Horizontes: mujeres en el medioambiente. Santiago: Isis International, No. 18

Despejando Horizontes (Broadening Horizons: women in the environment) brings together economic analysis, global policies, sociology, journalism, environmental activism, nuclear war, and development theories and how they affect women in the natural environment. Some contributors are: Wangari Maathai, who traces the history and outlines the objectives of the women's Greenbelt environmental movement of Kenya in which she is a key actor; Maria Cherkasova from Russia who focuses on the threat of the nuclear industry to people and the environment; Gita Sen from India who looks at women, poverty and population; and Jacqueline Pitanguy and Selene Herculano who assess the 1992 Earth Summit in Rio de Janeiro, discuss environmentalism in Brazil and look at the issues of women, gender and the environment. Other authors look at issues such as the external debt, race, class and gender as forms of resistance, the negative effects of structural adjustments policies in Guyana, Jamaica and Latin America, and the obstacles which face women journalists in China. The publication affirms that women are more vulnerable to environmental degradation because of their subordinate social role and that many of the specific effects which this degradation has on the lives of women is invisible as is their contribution to societal development. What is prominent is that women are at the forefront of the struggle to save the planet and that their actions and ideas reflect a very different understanding of the problems which face the world today. (In Spanish)

Seager, Joni (1993) Earth Follies: Coming to Feminist Terms with the Global Environmental Crisis. New York: Routledge

Seager's book explores what feminists can contribute to an understanding of environmental problems and offers a feminist analysis of the crisis caused by structures of power within institutions which are dominated by masculinist presumptions. Earth Follies' analysis determines that in order to understand and repair the already extensive damage done to the planet, one must look at agencies and institutions that shape modern life and perpetuate environmental degradation. Section one focuses on the military in times of war and the connection to the nuclear industry. Section two looks at the world of business, focusing on such areas as profit margins, short-term planning, hierarchies and emotional bracketing. This section also examines women as "other", as secretaries, wives and workers. Part three examines the role which governments around the world have played in environmental destruction, particularly the free trade market economy and the practice of waste dumping in countries in the South. Section four addresses the environmental movement and the organizations which have grown from it. Seager critiques their sexist and racist policies and programmes, and the masculinist presumptions which are often responsible for shaping them. This section also delves into the world of animal exploitation and explains how and why women are criticized for the success of the fur industry. Following this the author enters the debate of ecofeminism and the complicated historical relationship between women and nature. The final chapter "Hysterical Housewives, Treehuggers and Other Mad Women" begins with consumerism, focusing on woman-blaming, consumer manipulation and the personalization of the environmental crisis. It concludes by examining the stories behind some of the many women's grass-roots environmental organizations which have begun to appear.

Sontheimer, Sally ed. (1991) Women and the Environment: A Reader. London: Earthscan Publications Ltd.

From the perspectives of women from the North and the South, this reader describes how women live and cope with environmentally distressing conditions. The women and their organizations described here have produced demonstrably effective approaches for more sustainable uses of natural resources. and in doing so challenge conventional accounts of the role of women. The book is divided into four sections, the first three as essays on women's use and management of life-sustaining systems such as forests, land and water. The last section of the book chronicles a few examples of women's initiatives, both spontaneous and guided, which are taking place worldwide.

Warren, Sarah T. ed. (1992) Gender and Environment: Lessons for social forestry and natural resource management. Toronto: Aga Khan Foundation Canada

These essays by women from around the world articulate the premise that since "women are the primary users of natural resources for human subsistence in the developing world" they "have an extensive knowledge of their environments that is based on culturally-derived expertise and their own daily experience." As fuel wood becomes harder to find, water more polluted, food and cropland more scarce, women have begun to use their knowledge to organize locally, network globally, and become more politically active. Warren's book outlines some of the developments and changes in women's methods of organizing over the last three decades. By forming small dynamic local organizations or national coalitions, women have initiated a process and forum that enables them to share experiences, workloads, problems, and identify and explore their own needs, and come up with their own solutions to resource conservation. Over the past decade funds from Women In Development (WID) departments in government aid agencies have enabled women from the South and women from the North to exchange information, ideas and strategies. Various global networks and movements have begun to take shape with increasing momentum. Warren also cites the shortcomings of WID. The book identifies two key elements which give strength to women's organizing: literacy and ecofeminism. Literacy skills have given women more confidence to demand greater "access to economic, political, and natural resources" and ecofeminism strengthens their link to the land and unity. The final chapters consists of case studies of women's groups from the South and how they manifest their diverse organizing skills working together in agriculture, forestry, and water and soil conservation.

## Ecofeminism

Diamond, Irene and Gloria Feman Orenstein (1990) Reweaving The World: The Emergence of Ecofeminism. San Francisco: Sierra Club Books

This publication explores the emerging ecofeminist movement which represents a bridging of the environmental and feminist movements. The essays by scholars, scientists, activists, writers and artists communicate the diverse definitions about the ideology of ecofeminisms in the Western world. The authors explore topics such as "Rethinking Theology and Nature", "The Gaia Tradition", and "Ecofeminism and the Politics of Resistance". Marti Kheel reflects on the differences and similarities between ecofeminism and deep ecology while Judith Plant explores ecofeminist bioregionalism. The essays, albeit provocative, mostly are grounded in a western cultural perspective. A rare exception in this volume is the voice of Vandana Shiva of India whose essay here offers a powerful challenge to the West.

Gaard, Gretta ed. (1993) Ecofeminism: Women, Animals, Nature. Philadelphia: Temple University Press

Gaard and other contributors share the premise vis-a-vis the ideology of ecofeminism: "the ideology which authorizes oppression such as those based on race, class, gender, sexuality, physical abilities, and special needs is the same ideology which sanctions the oppression of nature." In this publication various essays' focus on "animals" as their central theme. In "Feminist Traffic in Animals", author Adams argues convincingly why feminists should be vegetarians. Gruen, in her essay entitled "Dismantling Oppression: An Analysis of the Connection Between Women and Animals" shows how both women and animals are linked together as 'the Other'. Other essays present a challenge to ecofeminism such as Huey-li Li's "A Cross-Cultural Critique of Ecofeminism". Li shows, by using China as a case study, why ecofeminists may need to re-think the woman-nature affinity. Gaard's "Ecofeminism and Native American Culture: Pushing the Limits of Cultural Imperialism" challenges ecofeminism's appropriation of Native culture. Gaard points out that ecofeminist theory is lacking vis-a-vis the complex economic, social and political forces which drive environmental destruction. Other authors discuss issues such as the relationship between ecofeminist theory and environmental history and an ecofeminist ethic.

Hessing, Melody "Women and Sustainability: Ecofeminist Perspectives" in Alternatives, Volume 19(4) 1993

In this article Hessing begins by putting Third World women's daily work into perspective: "Ajede wakes before sunrise in Zaire and sparks banana leaves and brush into flame for the morning cookfire. She sweeps the floor, tends the animals and prepares a meal for her six children before leaving to work in the fields." Hessing then explores how the linkages between environmental degradation, poverty and powerlessness affect all women. The author also provides a Canadian context by discussing the high degree of poverty and inadequacy of work environments faced by indigenous communities, senior women, and female single parents, adding: "the relationship between the socio-economic situation of women and environmental protection has traditionally been ignored by development programmes and government policy." Addressing the global picture, Hessing points out that although the Bruntland Report was groundbreaking, its gender neutrality reduces and ignores the roles and plights of women. She argues that, in contrast, an ecofeminist analysis focuses on the relationships between women and the environment. She then describes the main characteristics and limitations of: radical ecofeminism, which challenges the dual subordination of women and nature by patriarchy; liberal ecofeminism, who works for social change within the existing structures; and socialist ecofeminism which believes that these structures are the source of both women's oppression and also environmental degradation. She concludes the article by recognizing that there is a diversity of perspectives yet they have one common denominator: "the concept of sustainability. They also understand that only a fundamental and rapid shift in values and action will ensure the survival of life on earth."

Lahar, Stephanie (1991) "Ecofeminist Theory and Grassroots Politics" in Hypatia: Special Issue Vol. 6, Number 1

Lahar explores the links between ecofeminist theory and political activism. She encourages both deconstructionism of existing structures that dysfunction society while at the same time reconstructing society using an active social philosophy and critique. The author suggests that this can only be accomplished if there is continuous organization and grassroots activity. She provides the reader with parameters for creating and maintaining a solid basis for social and ecological responsibility and political participation. These parameters include: the need to treat ecofeminism as a moral theory, an expanded concept of nature in which humans have a place, adaptation of an ontology of nature as fundamentally material and subjective. The purpose and some of the pitfalls an integrated philosophy of humanity and nature are noted. Lahar concludes that it is crucial that an expanded concept of nature continue to develop philosophically in order to serve as a ground and context for social analysis, activism and political change.

Merchant, Carolyn (1985) "Feminism and Ecology", appendix B in Deep Ecology Bill Devall and George Sessions, Salt Lake City: Gibbs M. Smith, Inc., Peregrine Smith Books

Merchant maintains that feminism and ecology are related through the politics of language. The linkages are detailed under the following headings: all parts of a system have equal value, the earth is a home, process is primary, and there is no free lunch.

Mies, Maria and Vandana Shiva (1993) Ecofeminism. Halifax: Fernwood Publications

The first chapter of this path-breaking publication identifies the reasons why this is co-authored. Written by two women who live and work thousands of miles apart - one in the so-called South, and the other in the North - they found that they shared common concerns and thoughts vis-a-vis global politics which did not demonstrate uniformity or homogeneity "but rather a creative transcendence" of difference. Therein the two authors construct their own ecofeminist epistemology and methodology and argue for an acceptance of limits, and a rejection of endless exploitation, violence, and commodification. Chapters written by Vandana Shiva focus on reductionism and regeneration; environmental degradation and poverty creation particularly in reference to women and children; globalization and the rise of nationalism; homelessness in the "Global Village"; women's indigenous knowledge as it pertains to biodiversity conservation; the impact of GATT on agriculture and women in the South and the Chipko women's movement's concept of freedom; and the issue of the intellectual colonization of the North.

Maria Mies focuses on feminist research methodologies; how and why nature became the enemy; the colonization of women, the issues of violence, desire, pornography and prostitution and tourism, reproductive technologies and alternatives; the dilemma of self-determination; and consumerism. The two authors come together again in chapter 19 to look at population control and coercion. Maria Mies concludes the book by advocating a new "subsistence perspective".

Plumwood, Val (1989) "Ecofeminism: An Overview and Discussion of Positions and Arguments" in Women and Philosophy, Janna Thompson (ed.) Bundoora: Australian Association of Philosophy

The first part of this paper critiques a number of ecofeminist writings from the following points of view: dualism and transcendent hierarchical dualism; the convergence of feminist and ecological metaphysics with particular attention to the role of mechanistic views of nature. Plumwood then proceeds to define deficiencies in their writings and possible directions that theorists might take to remedy these deficiencies. Plumwood feels that there needs to be a more detail devoted to the various arguments and assumptions used in order make their positions more clear and distinguishable. She puts forward the argument that ecofeminists must be prepared to support their theories by examining all existing alternatives. Rejection of a particular theory without looking at all the alternatives is not convincing support. Ecofeminism, Plumwood believes, can ally itself with both those that question dualism and the difference theorists.

Salleh, Ariel K. (1988) " Epistemology and the Metaphors of Production: An Eco-Feminist Reading of Critical Theory" in Studies in the Humanities Vol. 15, Number 2.

Through this publication, Salleh supports the critical theory analysis of the nature versus culture dichotomy by contending that Critical Theory in its epistemology and substantive analyses indicates a convergence of feminist and ecological concerns - ecofeminism. She theorises that over time, the ideal of the "mastery of the environment, both natural and social", has led to a division of reasoning between ethics and functional rationality. The emphasis on functional rationality has led to a reasoning that exists on one plane only and therefore, lacks dimension. The emphasis by "men"(not women) on productivity is based on [his] inability to be productive ie reproduce. The result of this is marginalization of females. The author warns of the equality trap which co-opts women into assuming male (read object-oriented) roles. She considers this a travesty and less than equal to a fully fledged human individual. Salleh feels that the emphasis on production with its accompanying technology have reduced sexuality and reproduction to a commodity controlled by men so that women can emulate men. The emphasis that the humanities have placed on ideology and scientific productivity continue to serve the culture of domination.

Warren, Karen J. (1987) "Feminism and Ecology: Making Connections" in Environmental Ethics, Vol. 9, Number 1

Warren analyses four views of feminism - liberal, traditional Marxist, radical, and socialistic - from the perspective of an ecofeminist. She determines that while each may provide some insight into the oppression of women and nature, they are unable to provide a sound basis for ecofeminism. She concludes with an argument for transformative feminism which not only supersedes the four views of feminism previously discussed but that makes ecofeminism central to feminist theory.

Warren, Karen J. (1988), "Toward an Ecofeminist Ethic" in Studies in the Humanities Pennsylvania: Indiana University

In this publication, Warren notes that women have been systematically excluded from management of forests in India because their use of the forests is exclusive of fibre production (primarily for cash cropping) and therefore invisible to the "experts" who are men. The author states that the resulting gender bias by the exclusion of women in the area of intellectual pursuit must be remedied. Since feminists seem to be divided on how to remedy this situation - reform versus revolution - the question is raised as to the options available to those interested in both some reform and some revolution. A number of options are discussed including generalizations, interconnections, inclusivity, contextualism and reciprocity. She goes on to state that "ecofeminism is built on the multiple perspectives of those whose perspectives are typically omitted or undervalued in dominant discourses. Warren feels that an ecofeminist perspective is appropriate, structurally pluralistic, inclusivist, and contextual, emphasizing through concrete examples the crucial role context plays in understanding sexist and naturalist practice". The essay concludes that when the connections between women and nature are not acknowledged, the resulting theory and practice are incomplete or male gender-biased and therefore, necessitates need for these connections be taken seriously by feminists and environmental ethicists.

Warren, Karen J. (1990) "The Power and the Promise of Ecological Feminism" in Environmental Ethics, Vol. 12, Number 2

Warren outlines the concept of an oppressive conceptual framework, its features, and how it relates to both women and nature. The ideas of ecofeminism are related to traditional feminism through the concept of oppression in relation to women, class, age, colour and also nature. The use of narrative is explored and its relationship to arrogance and domination. The paper concludes by comparing and contrasting a list of feminist and ecofeminist ethical boundaries and their interrelationships.

Warren, Karen J and Jim Cheney (1991), "Ecological Feminism and Ecosystem Ecology" in Hypatia: Special Issue Vol. 6, Number 1

Warren and Cheney discuss ten similarities shared by feminist and ecosystem ecology themes to further dialogue on the nature and direction of future bridge-building between the two. This publication provides definitions for ecological feminism and ecofeminist ethics, and ecosystem ecology. The similarities are seen through the lens of hierarchical (observational set) theory. Space, time dependent observation, methodologies, anti-reductionism, inclusivity, complimentary approaches, complexities, whole system behaviour plus individualism, networks, context of scientific data or observation, and re-conceiving of research, methodology, objectivity and knowledge are topics covered in detail. The thrust of the book is that "if we understand the objects of scientific inquiry as actors and agents and insist upon ethical and political basis for objectivity, accounts of the world based on a logic of discovery give way to a power-charged social relation of conversation. The world neither speaks itself nor disappears in favour of a master decoder".

Young, Iris Marion (1983) "Feminism and Ecology" and "Women and Life on Earth: Ecofeminism in the 80's", book reviews in Environmental Ethics Vol. 5, Number 2.

Young feels that the papers presented in "Feminism and Ecology" "broaden and deepen the theme of the conquest of nature by focusing on the basis of such an approach to nature in patriarchal modes of thought and action". Dualism has been supported in both theological, psychological, and scientific study. The metaphors of conquest, mastery and invasion abound with respect to women and nature particularly in Western culture. The papers assert that there needs to be explicit confrontation with the structures of male domination and a dismantling of hierarchical dualism. The "Women and Life on Earth" collection deals with a wide variety of ecological and particularly, political concerns in the form of protest. Three Mile Island, The Love Canal and Rachel Carson's findings are examples used. Young maintains that these books focus only on logical and symbolic sources of domination rather that investigating real causes and providing ways of implementing social and cultural change. Ecofeminists must seek to understand how power is exercised and develop strategies to confront and undermine these power bases.

## Action Initiatives

Barzetti, Valerie and Yanina Rovinski (eds) 1992 Toward a Green Central America: Integrating Conservation and Development Connecticut: The Panos Institute

In the forward of this publication, Mark Halle suggests that "like peace and justice, sustainable development is easy to accept as a goal and remarkably difficult to achieve in practice (pg. ix)." With this statement in mind, the main goal of this publication is to outline six locally-based initiatives in five countries of Central America which actively pursue a course of sustainable development to counteract environmental destruction and raise the quality of life of those involved in or affected by the projects. Many of the 13 authors who come together in this publication note that these case studies can be used as a model for replication, and inspiration within the region as well as other parts of the planet. In chapter one, Stanley Heckadon provides an indepth geographical, demographic, economic, political and developmental profile of the region. He identifies armed conflict, production of monocultures accompanied by the extensive use of agro-chemicals, and internal political authoritarianism as the key players behind present-day environmental problems in Central America. Other essays comprise an empirical report, through the voices of women, men and one member of the Kuna indigenous peoples of Panama, of creative environmental initiatives taking place in Central America. Actions described include protecting and conserving fragile ecosystems, designating protected areas, promoting reforestation and ecotourism, preventing soil erosion, providing potable water and nurturing aquatic fowl for its ecological and nutritional value. Each case study offers an holistic view of the project undertaken by providing a political and environmental sketch of the country, the benefits and successes of each initiative and most importantly, the disadvantages, dangers or challenges linked to the work. Three key elements stressed in each case studies are the importance of integrating scientific knowledge and research, both national and foreign, with traditional, women's or community knowledge and practice in order to maximize the potential of a project, adverse government policies which often hinder the implementation of alternative visions of socio-ecological management and preservation and finally, is the critical role which environmental education plays in each action initiative. Maps, indigenous drawings and photographs are woven into the text.

Brown, Lester et al (1991) Saving the Planet - How to Shape an Environmentally Sustainable Global Economy. Washington D.C.: The Worldwatch Institute

This Worldwatch Institute publication reveals how the world's economy can be vigorous and environmentally-friendly at the same time. Profound political, social, and economic reforms must be initiated by businesses, religious organizations, civic groups, activists, governments, and voters. The book states that we can transform our present actions to create a sustainable global community by thoroughly restructuring energy systems, tax systems, agricultural and forestry systems, international aid, and the economics of both industrial and developing nations. In order to accomplish these tasks, the authors suggest that we replace oil and coal as the world's main energy source, and develop new sources of energy such as solar power. They explain how our throwaway society can be replaced by one which recycles and reuses while at the same time becoming more economical. The authors alert us to the natural destruction which is occurring at an alarming rate, as a result of human activity, and warn us that if we continue in this direction, it will make the planet uninhabitable. They tell us that if we are ever to meet the needs of all the earth's population, we must manage our forests, grasslands, fisheries, and croplands more intelligently. The book cites the need to increase the wold's grain harvest dramatically in order to eliminate hunger. Some ideas it provides for doing this effectively are: intercropping, transplanting, and transforming fertile land used for grazing cattle into cropping land. The authors argue that governments must be made to see that human progress is not just economic growth and recommends that governments produce incentives which encourage sustainability and tax activities which reduce environmental destruction. The book demonstrates how the world's economic welfare and restructuring are necessary to ensure environmental sustainability, and it warns that the metamorphosis to an ecological society must take place soon.

Hisham, Mohamed Ahmed et al (1991) Whose Trees? A People's View of Forestry Aid. London: Panos Publications Ltd.

This publication is part of a program to encourage greater participation in the development debate by people of the South in forestry policy. First it looks at the history of forest aid, and some of the misconceptions and contradictions "which have bedeviled the aid industry and compromised its chances of success." It next outlines the changes which have taken place over the years in forestry, particularly the role of trees as suppliers of fuelwood, and clarifies that many early attempts at community forestry "were merely miniature versions of commercial forestry plantations: rows of eucalyptus planted in straight lines and surrounded by fences." Nor has community forestry escaped the top-down development approach which means that village communities were not encouraged to feel the masters of their own development. The 1980s saw a shift in forest policy and a move towards an integrated approach which links trees to every aspect of rural life; however, forestry departments have a legacy of mistrust to shake off. Three case studies from Sudan, Tanzania and Nepal give examples of various types of grass roots forestry projects which are springing up all over Asia and Africa.

## Part C: International Trends and Practices

### Environmental Politics

Kamieniecki, Sheldon ed. (1993) Environmental Politics in the International Arena: Movements, Parties, Organizations and Policy. New York: State University of New York Press

This publication is based on the premise that global environmental issues can be best understood by studying environmental movements, ecological parties, international organizations and regimes, international law, and the problems of policies of specific nations in different regions of the world. The environmental movement around the world is having a visible impact on national and international policies; therefore the book examines the dominant ethics, attitudes, and moral values behind this movement and analyzes its influences. Chapter one discusses the role which stories play in defining who we are and the society around us, and how people are learning and adopting a new story to determine how the world works. Chapter two examines the historical evolution of the environmental movement from the 1800s to the present in Western Europe. Chapter three identifies a number of grass-roots popular environmental movements in the South and articulates the common patterns which emerge. Section two examines the growing Green Party phenomenon, its appeal, successes and methods of operation. Section three looks at the role of international organizations and law within the green movement. The final section takes a comparative look at politics and public policy in the European Community, the former Soviet Union, Latin America and Asia. The book concludes by placing environmental challenges in a global context.

Paehlke, Robert C. (1989) Environmentalism and the Future of Progressive Politics. Westford: Murray Printing Company

Paehlke argues that environmentalism is the basis for a new political ideology, the first such ideology since the evolution of socialism. This book offers an historical, philosophical, and political consideration of environmentalism, and evaluates the potential of an environmentally informed progressive movement as a political response to neoconservatism in the 1990s. Part one outlines the evolution of environmentalism by looking at conservation, ecology and pollution, population and resources and the energy crisis. Part two develops the connection between environmentalism and scientific knowledge and how it can be understood as a new scientific paradigm, a set of values and as a political ideology. Part three examines neoconservatism, environmentalism and contemporary realities, and the role environmentalism can play in the restoration of moderate progressive political ideas. The final chapter outlines the future of environmentalism as a new ideology which will shape the world to come.

Porter, Gareth and Janet Welsh Brown (1991) Global Environmental Politics: Dilemmas in World Politics. Boulder: Westview Press, Inc.

Chapter one traces the emergence of global environmental politics over the years as global environmental problems moved from "low politics" or minor issues to an arena of major concern. The authors argue that its dramatic rise is a direct reaction to explosive population growth and economic activity in the latter half of the twentieth century which subsequently led to an increase in world energy consumption, contributing to the greenhouse effect or global warming, the contamination of soils, oceans and forests, reduction in biodiversity, and desertification. The authors explain the concept of international regimes as a set of norms, rules, or decision-making procedures, whether implicit or explicit, that produces some convergence in the actors' expectations in a particular issue area and how they affect global policy. They next explain the paradigm shift as the change that gave rise to an alternative paradigm of ecologically sound policies promoted by an emerging global community of practitioners, NGOs and scholars. Chapter two describes the various actors in the environmental arena such as nation-state, international organizations, multilateral financial institutions, non-governmental organizations, and corporations. Chapter three examines key issues such as transboundary air pollution (acid rain), ozone depletion, whaling, African elephant ivory trade, the international toxic waste trade, Antarctic minerals, global warming, and tropical forest destruction. Chapter four discusses the issues of global security, North-South relations, and trade. The authors argue the harmful and life-threatening impacts of military activities on the natural world, citing the Persian Gulf War as an example of consequences, pointing out "the United States faces a choice between continued nuclear weapons production and protection of the environment." The book identifies the areas of friction, as well as the reasons for mistrust by the South, regarding policies of the North, and also the negative impacts of GATT and so-called Free Trade. Chapter five suggests and elaborates on alternative approaches to global cooperation such as an incremental change approach; a global partnership approach; and a global governance approach that calls for a far-reaching institutional restructuring.

Spretnak, Charlene and Fritjof Capra (1986) Green Politics: The Global Promise Sante Fe: Bear & Company

This book details the rise of the Green Party in Germany in order to educate and influence its readers. The first seven chapters are devoted to describing who the "Greens" are by using their basic beliefs with respect to ecology, social responsibility, grassroots democracy and non-violence. Some of the internal politics of the party are detailed, in particular the lipservice paid to the women in the party as some gain more influence both within the party and within the political system of the country. One chapter briefly discusses the "greening" of the world and the last two chapters (nearly one quarter of the book) are devoted to the "greening" of the U.S.A. in both the practical and theoretical sense.

Swift, Jamie and Brian Tomlinson eds. (1991) Conflicts of Interest: Canada in the Third World. Toronto: Between the Lines Publishing

In Conflicts of Interest, activists and scholars analyze and critique the latest development issues linking Canada and the Third World. Brian Tomlinson examines Development in the 1990s: Canada's economic relations with the Third World. He argues that Canadian aid policies "cannot be separated from Canada's global economic policies and from public support within Canada" if they are to be relevant to the popular movements in Africa, Asia and Latin America, where alternative development strategies effectively challenge the imposed dominant economic growth models. Elsewhere, Jamie Swift discusses the global debt crisis as "A Case of Global Usury", and examines Canada's role in the global environmental arena, noting that it has not been immune to environmentally destructive megaprojects. Chapter three, by Betty Plewes and Ricky Stuart, critiques the notion of Women and Development, stressing its failures and weaknesses as a case to support a Gender and Development Approach. Charles Lane outlines the failure of the Canadian-Tanzania wheat program, and Brian Murphy defines non-governmental organizations and international non-governmental organizations to examine their nascent role in the international arena. Esther Epp-Tiessen looks at "The Links Between Militarism and Underdevelopment", drawing attention to the vast amounts of money which are spent on "war machines" in both the developed and developing worlds. A chapter by Pam Colorado, a native woman from Alberta, is a passionate story told from the top of a mountain which eloquently defines "A Native View of Development". Eleanor O'Donnell discusses how Canada portrays the Third World through mass media and Anton Allahar concludes the publication with his chapter "Manufacturing Legitimacy: Ideology, Politics, and Third World Foreign Policy."

## Environment, Policies and Structures

Ecodecision, Environment and Policy Magazine No. 10, September 1993 Montreal, Quebec

This bilingual French/English magazine contains articles by authors from around the world which focus on the many different aspects of environmental degradation and regeneration as well as key actors such as women, corporations, the military who play diverse major roles. The articles range from corporate responsibilities to the roles which women play at the grass-roots level to rebuild the planet. Vandana Shiva from India explores biotechnology and the colonization of regeneration, while Nafis Sadik of the U.S.A. examines the women and population debate. Peggy Antrobus of Barbados focuses on the quality of everyday living for women in the Caribbean, and Thais Corral of Brazil puts forward women's views for a new world order. Terry Muller of Canada looks at the environment and legal development, and Francois Ramade of France looks at population pressures on the biosphere. Other articles focus on democracy, security and the environment; the role of rural women in the world food supply; the dilemma of donor agencies; the relationship between military agendas and environmental destruction; the Women's Action 21 paper; poverty; and the 1992 Rio conference.

Reed, David, ed. (1992) Structural Adjustment and the Environment. Boulder: Westview Press

This publication focuses on the International Monetary Fund and World Bank-developed structural adjustment programs (SAPs), created to address what these agencies perceived as the very serious debt payment crisis of the South. Reed believes that SAPs in themselves are not bad; however, their policies need to be reformed. He states that the failure of SAPs is in their design which has had negative impacts on the environment and has been unable to create "a sustainable development path." In the short-term SAPs do not alleviate poverty; they make it worse. Reed does not believe that environmental degradation and unsustainable practices should be the inevitable outcomes of SAP policy and he makes a number of recommendations to promote sustainable development. He points out that adjustment "must increase the attention given to rebuilding natural capital, restoring degraded natural resources, improving institutional capability for planning and managing resource utilization." Reed states that until the public is involved in managing the environment and their needs and concerns met: "fundamental improvement in the management of the local, regional and global environment will continue to prove elusive."

Throughout the publication, Reed outlines the link between the failure of SAPs and environmental destruction, showing how present policies do not and cannot contribute to sustainable development.

## Women in the Global Arena

Food and Agricultural Organization of the United Nations (FAO) and the Swedish International Development Authority (SIDA) "Restoring the Balance: women and forest resources", August 1990

This government report describes the factors that militate against women participating fully in environmental projects: "[W]omen are short of land, time and money, often poorly organized, have restricted access to political power, and limited ability to influence decision-makers." It examines how women in the South have taken action, either spontaneously or through community-based organizations, to protect forest resources from destruction for instance, and how such positive initiatives have led to progressive ideas which can be shared worldwide. This publication outlines how women are taking the lead in times of ecological disaster to rebuild destroyed agricultural land, create nurseries, and protect hillsides, replant indigenous trees. Also, a number of policies to support and strengthen already existing innovative local women's groups are suggested.

Gladwin, Christina ed. (1991) Structural Adjustment and African Women Farmers. Gainsville: University of Florida Press

This publication presents evidence from noted African and Africanist social scientists who debate the pros and cons of structural adjustment programs (SAPs), looking at the impact of SAP's on women in Nigeria, Zaire, Tanzania, Malawi, Cameroon and Ghana. Pro-SAP writers argue that SAP reforms are the best means to invigorate stagnating agricultural and industrial sectors of Africa. Such reforms include: "devaluation of overvalued currencies, increases in artificially low food prices and interest rates, a closer alignment of domestic prices with world prices, an emphasis on tradeables/exportables and the gradual withdrawal of restrictions on competition from abroad, privatization policies, a decrease in government spending, wage and hiring freezes, reductions in employment in the public sector or the minimum wage, the removal of food and input subsidies, and across-the-board reduction in budget deficits". Those writers who oppose SAPs argue that they have failed to stimulate economic growth or recovery, and that despite a heavy focus on agriculture, and effort to increase producer incentives for farmers, agricultural production and incomes have worsened. Anti-SAP writers further argue that SAPs are "macroeconomic" in scope, therefore focusing on national and international economic levels at the expense of the local. That women provide most of the labour required to produce food means that it is primarily their situations which have been most adversely affected: "Due to social stratification at the village level and inequality in gender relations at the household level, women rural producers are in no position to benefit from the supposedly gender-neutral effects of SAP." The book concludes with four case studies of women's organizations' responses to structural adjustment and action plans by the FAO to integrate women into development projects.

Kelly, Petra "Women and Global Green Politics", Woman of Power Issue 19, Spring 1991.

This article analyzes the work of the green feminist movements. Kelly notes that "Global Green feminist politics" have never had such an opportunity" as they do now to transform the world and "feminize power." She examines the difference between men's concept of dying for a cause and the feminist daring to live for a cause. Green feminist-based transformation is described through the work of many women around the world such as the nuns in the Philippines who non-violently brought about the fall of the Marcos regime, the Chipko women who saved their forest, Argentinean mothers who search for their "disappeared" and a U.S. peace activist sentenced to five years in prison for destroying three navigation computers designed for nuclear war-making. Kelly outlines how and why women are more affected by environmental devastation, stressing that the "overlooked factor in the power of women as world political force is the magnitude of suffering" combined with magnitude of women. In addition, she notes that patriarchy has kept women divided and invisible, questioning how many know that Gandhi's nonviolent resistance strategies came from a nineteenth century India Women's movement or that women's actions inspired the "Solidarnosc" movement in Poland. The author believes that most women want no part of established male power and therefore, the concepts of power and the way in which that power is used must be transformed. Kelly concludes by noting that the Western world must transform itself first. She defines transforming the planet as promoting social justice, and ending exploitation and weapons transfer.

Peterson, V. Spike and Anne Sisson Runyan (1993) Global Gender Issues. Boulder: Westview Press

This publication looks at world politics "through a gender-sensitive lens." It explores the nature of the difference of how men and women are situated within global processes and the extent of gender inequality. The introduction analyzes the theory of looking through lenses and how they work. It cites the reasons for identifying gender as the central focus within a global context, and outlines the presence of women in world politics. The focus of Chapter two is on "the power of gender", how the lens works to shape our lives and filter our understanding. Chapter three examines how and where women and men are differently situated in relation to the gendered divisions of power. Chapter four outlines how women and men are differently situated in relation to gendered divisions of violence, labour, and resources. Chapter six identifies four feminist orientations and distinguishes between practical and strategic interests, and examines gender at work in revolutionary movements, in activities promoting peace, anti-militarization and anti-violence in movements for economic justice and sustainable ecology. The final chapter sums up the previous chapters and closes with recommendations on how individuals and institutions can promote a world less burdened by the dilemma of gender and other inequalities.

Peterson, V. Spike ed. (1992) Gendered States: Feminist (Re)Visions of International Relations Theory. Boulder: Lynne Rienner Publishers, Inc.

This publication explores the core concepts of political and international relations theory which include the state, sovereignty, and power, and reframes them through feminist lenses. The authors show what distinguishes a gender perspective and highlight the role which gender plays in constructing and maintaining the sovereign state system and its related notions of security, autonomy, and identity. Chapter one poses the question of what is at stake by taking feminism seriously. Chapter two answers the question "What Exactly Is Working with the Liberal State as an Agent of Change?". Chapter three explores women's involvement in the military and international security and how this affects the feminist standpoint. In chapter four, Mary Ann Tetreault develops a framework that can be used to analyze the interaction between revolution and the role of women in society. Chapter five discusses the move from a natural order to a state order and puts forward ecofeminist perspectives that resist unified metaphors of nature by exiting the "cultivated garden of white, Western man and his state and entering into a more fractious and just politics through which people's relationships with each other and with nature are redefined. The final chapters explore ideas of sovereignty, identity and sacrifice, feminist views of autonomy and obligation in international relations, and offer a gender critique of the theory of international relations.

Shiva, Vandana (1989) Staying Alive. London: Zed Books Ltd.

Staying Alive defines the links between the ecological crisis, colonialism, patriarchy and the oppression of women. Shiva explains economic development as maldevelopment and how the impact of science, technology and politics are inherently exploitative. She outlines how the so-called Age of Enlightenment and the theory of progress "began to destroy life without any assessment of how fast and how much of the diversity of life on this planet is disappearing." Chapter one traces the historical and conceptual roots of development as a project of gender ideology, and analyzes how the particular economic assumptions of western patriarchy have subjugated more humane assumptions of economics as the provision of sustenance. Chapter two addresses the myth of neutrality and universality of modern science, and Chapter three describes the world which Indian women inhabit and their roles as leaders in ecological movements. Chapter four cites the beginning of the destruction of forests and women's expertise in forestry, focusing primarily on the Chipko women's forestry movement of Garhwal.

Chapter five analyzes the food crisis in terms of male-dominated agricultural practices. Chapter six looks at the water crisis, contrasting the reductionist view of water and water management with the holistic knowledge women have to conserve and use it only when necessary. The final chapter looks at reclaiming the "feminine principle" as a non-violent, non-gendered and humanly inclusive alternative to the dominant science, technology and development paradigm which exists today.

## Indigenous Teachings

Johnson, Tim and Andrew Cornell (1993) Echoes of the Ancestors. Lanark: Plenty Canada

Echoes of the Ancestors provides an introduction for educators and other individuals pursuing cross-cultural work. The book outlines examples about why and how indigenous African and non-indigenous co-workers in Africa must combine selected traditional knowledge with selected western technologies, to work in an effective partnership. The book's message is, all partners first must recognize and then overcome the continuing problems caused by a colonial legacy. For example, younger indigenous generations no longer see the value of traditional ecological respect while at the same time African government policies and also foreign aid approaches perpetuate development methodologies geared to fail. Specific African community projects facilitated by Plenty Canada are described, such as development of water systems and tree planting by local indigenous people, and also the Village Technology Training Centre (VTTC) in Lesotho. At the VTTC, vegetable gardens, soy dairy and training facilities are integratively designed to resemble a traditional village. Chapter contributions by individual indigenous African environmental workers compose the book's second major theme. They identify honestly the local obstacles, caused by their own people, to re-establishing a better quality of life. They also outline the essential attitudes, skills and cross-cultural methodologies that can enhance human cultures and our life support system embedded in the natural world.

## Environmental Education

ASPBAE Courier, "Environmental Education for Sustainable Development", No. 55, 1993.

This edition of the newsletter by the Asian-South Pacific Bureau of Adult Education highlights the role which environmental adult education can play in building sustainable societies and development. This role is identified first in a presentation of the historical Belgrade Charter which, though drafted ten years ago, still remains pertinent today in its principles and philosophy of environmental education for adults. Gordon Ng's article defines his approach to environmental education, the 3 "A"s approach, which consists of Awareness-raising, Attitude-changing and Action-plan implementation. Other articles deal with issues such as appropriate education technology, and environmental education in government in-service and training centres.

Harmony Foundation of Canada (1991) Community Workshops for the Environment

This manual is a flexible guide, intended to be used as a tool for educators and community groups to organize and present workshops on environmental values. The workshops are designed to inform participants about some of the Canadian Environmental issues and to stimulate hope and community action. The manual is divided into three parts. Part I provide introductory material on workshops, includes the facilitator's role, how to plan a workshop, what components to include and sample workshop outlines. Part II focuses on action within the main topics of energy, hazardous materials, waste reduction, and water use. Part III provides a basic introduction to solving environmental problems through community action.

Ibikunle-Johnson, V. and Edward Rugumayo (1987) Environmental Education Through Adult Education. Nairobi: African Association for Literacy and Adult Education.

Environmental Education is the first manual on this subject to come out of Africa. The manual begins with a glossary that defines the environmental and education terms subsequently used throughout the text, such as ecology, development, ecosystem, adult education, pollution, viruses, etc. The manual's content focuses on facts and principles about four environmental themes: Health, Agroforestry, Population and Urban/Industrial Development. For each theme the problem is identified, giving a case study and teaching examples, accompanied by extensive bibliography and reference materials. The final chapter outlines some techniques used in adult education, such as role playing, story-telling, field trips, seminars and workshops, panel discussions, symposiums and debates. Learning aids are defined as posters, posters, pictures, slides and films, and flip charts.

International Council for Adult Education Convergence, Volume XXV, Number 2, 1992.

This special issue of Convergence focuses on environmental education with articles from around the world. Moema Viezzer of Brazil looks at how literacy classes can be used to promote environmental awareness, linking a clean and healthy environment to a human right. Viezzer writes: "[one] cannot say that it is more natural for women to be more interested in the environment than men, but it can perhaps be understood through history that if in a social relationship where women have always been treated as subordinate to men, and have been totally dominated by them, a parallel setting would have been created for men to dominate and destroy nature as well." Patricia Mische from the United States discusses a pedagogy of ecological responsibility and the need to learn to reinhabit the earth. Kamla Bhasin of India outlines the problems of mainstream development, defines a vision of sustainable development and makes recommendations of what development activists can do to help preserve the world. Marta Benavides from El Salvador outlines the concept of sustainable societies as being "based on social justice and equity, economic viability, sound environment, popular organized participation, and in the promotion and maintenance of durable peace." Ewa Usang looks at various literacy educations such as Freirean strategies, functional literacy methods and organic methods which can be "used to propagate and promote green literacy." Ibrahim Al Agib outlines the elements of environmental education in the Arab Countries and Andy Alm explores the use of computer electronic mail networks to support the work of global environmental education.

"Learning for the Future: Adult Learning and the Environment", A NIACE Policy Discussion Paper, April 1993

This policy discussion paper is intended to stimulate debate about how practitioners can develop more and better opportunities for environmental education for adults. The paper begins by considering the case for environmental adult education by focusing on political commitments, current provisions, training, and the role of voluntary organizations. It concludes with an examination of why adults should be targeted. The paper then goes on to report on the levels and kinds of activities that currently exist and then identifies a series of developments such as curriculum and institutional changes, discussions on values, building partnerships, staff development and social policy issues, all of which the authors of the report see as necessary steps in the transition to a more sustainable society.

Matthias Finger "Environmental Adult Learning in Switzerland", Final Report to the Swiss National Science Foundation (1992).

The findings in this report are based on a representative survey of the Swiss population. The analysis shows that there is a high level of sensitization, concern and fear of environmental problems among the Swiss. However, despite these high levels, the Swiss actually do little for the environment. The report outlines how further learning about the environment has become a substitute for behavioural change or environmental action. The report concludes that more environmental information and knowledge will not translate into corresponding behaviour or action. Recommendations put forward by the author include: provide the population with nature experiences, particularly for the young and urban dwellers; involve people in environmental activism projects, particularly school children; address fear and anxiety; and provide more knowledge about the environment beyond sensitization needs. The author notes that the challenge of environmental education is to develop programmes which integrate all of the four recommendations.

Orr, David (1992) Ecological Literacy: Education and the Transition to a Postmodern World. Albany: State University of New York Press

This publication outlines the changes that must occur in the educational system if ecological disasters are to be avoided. The essays in this volume, written between 1984 and 1989, represent an extended reflection on the crisis of sustainability in the modern world, and what this means for the theory and practice of education. Part one focuses on the issue of sustainability, the problems, meanings, systems and strategies. Part two looks at the role education must play in the journey to a postmodern world. It defines the place of pedagogy in this new world and asks questions vis a vis the purpose of education and whether environmental education is an oxymoron. Part three asks the question "What Knowledge for What Purpose?" if there is no planet left on which to function, and examines food and agriculture systems.

Peralta, Joaquin Esteva "Ambientalismo y educación. Hacia una educación popular ambiental en America Latina". Congreso Iberoamericano de Educación Ambiental de CEAAL, 22 al 27 de noviembre de 1992. Guadalajara, Jal., Mexico.

This document outlines the intentions and activities of environmental popular education of REPEC (the Network of Popular Education and Ecology) of the CEAAL (the Adult Board of Education of Latin America). This network since 1983, with links reaching throughout Latin America, has brought together all the institutions and non-governmental organizations which work in the area of popular education. REPEC was established as an opportunity for exchange for popular educators working on environmental action projects. It also aims to contribute to the unity of the popular education movement, permitting the Network and its regional organizations to grow alongside other CEAAL networks. The Network endeavours to find a philosophy which will deeply transform environmental theory and practice. This work summarizes the contributions of important researchers in the field of popular education and environmentalism. It outlines the challenges faced by these fields which heighten the importance of the development of an environmental vision coming from popular education.

The National Institute of Adult Continuing Education "Learning for the Future", a special issue on adult learning and the environment, in Adults Learning, Vol. 4 No. 8, April 1993.

This special issue presents different examples on how educators and practitioners provide environmental education for adults. Articles by various authors from around Europe focus on current situations in environmental education and training, education and action for urban environments, and environmental ethics. Other articles examine the role which local communities play in setting environmental agendas and offer practical guidance on how everyday objects can be used to raise topics for discussion and action about the environment.

Red de educación popular y ecologia Educación Popular Ambiental en América Latina, Consejo de la Educación de Adultos en América Latina (no date) (in Spanish)

This publication begins by outlining the topics that will be covered, background information, objectives, activities, procedures and limitations of the study do to a lack of materials on the topic of environmental popular education. Chapter provides a description of the various ecological problems affecting Latin America, the environmental movement as well as the key elements of environmental popular education. Chapter three gives a description and analysis of results of an examination of institutional factors that determine the facility to carry out projects taking into account intellectual, economic and infrastructures. The final chapter outlines various experiences in working in the field of environmental popular education. The annexes provide information on projects being carried out, agencies in the North that fund environmental popular education, available publications through various environmental organizations, audio-visual productions and an environmental education bibliography.

## Women and Environmental Education

Clover, Darlene E. (1994) "Gender, Transformative Learning and Environmental Action", Transformative Learning Centre, OISE (unpublished)

This publication, part of a series of working papers, highlights women as accomplished educators, communicators, organizers, trainers and environmental activists. It focuses on the practices, methodologies and materials women around the world (although particularly in the South) use to empower those around them involved in environmental action initiatives. The paper begins by defining the terms transformative learning, adult popular education, the environment and a gender approach to environmental action. The author views the issue of "gender" as an important component of a feminist approach to environmental education and not as a substitute for it. The various sections discuss elements of feminist popular education, grassroots, women's ways of viewing the world, how women are redefining and challenging power, activist and educational components of local, national and global organizing and ecofeminist theories. Four case studies from Brazil and Canada illustrate women's ways of educating vis-a-vis environmental action. Over half of the references are drawn from women from the South.

Lechte, Ruth "Women as Educators for Primary Environmental Care". Paper written for the May 1993 Seminar on Environmental Education for Women in Asia, Taiwan

The argument of this paper is that healthier and better educated people are more able to participate in good environmental development. Education and training empowers by creating a sense of confidence and understanding. Lechte identifies the paper as a call to deliver knowledge and education to women and for more women to become educators and trainers. The author frames the work by discussing the strong emphasis on education and knowledge in documents from the United Nations Conference on Environment and Development (UNCED). In Section two Lechte reflects on why there is, and should continue to be, an emphasis on the training and education of women. She sees women as traditionally being the major educators in their communities who now need to receive more updated information so they can operate at macro as well as micro levels. In the next section Lechte defines primary health care and relates the application of its concepts to the environment. Lechte puts forward the idea that, by empowering women and their communities, the world has a better chance of survival. Section four explores the notion of sustainable development by examining the way the world is run and its economic systems and emphasizing the role of education in helping to understand "just what may be destroying the very ground of our being". Section five describes the benefit of environmental education and a possible process which could be used that includes identifying the problem, the solution, the resources needed, the audience and ensuring that the problem is clearly understood. The author concludes by identifying a number of key initiatives which women have undertaken around the world both to combat environmental degradation and moreover to build or restore healthy communities.

Women and Environments: Women, Education, Environment and Development. Toronto: Our Times Publishing, Vol. 13 No.3/4, Winter/Spring 1993.

These writings compiled by women from around the world evoke the "personal is political" ethos. They communicate how their strength as women has moved them to take many diverse actions to protect the environment, support one another, educate themselves, provide economic, moral, social and phycological support and challenge oppressive global structures and processes. Various essays look at local initiatives by women in Nigeria towards a healthy environment; discuss the myths and facts vis-a-vis global population; outline the debt crisis in Latin America and its particular impact on women; articulate the struggle for development which women face in Cuba; make linkages between women and nature; and discuss how the United Nations Conference on Environment and Development is now being seen as an excellent example of the potential of women's participation and organizing capacity.

## Part E: Food Production, Consumption and Distribution

### Women and Agriculture

Dixon-Mueller, Ruth (1985) Women's Work in Third World Agriculture. Geneva: International Labour Organization

This author gathers information from scores of studies carried out in the Third World and describes how women are the most active producers in agriculture throughout the Third World. Dixon-Mueller points out that development programmes, GNP, and labour statistics often ignore women's key roles in this area and, as a result, development plans do not work for women; consequently, their status either remains low in society or even is diminished. Chapter one looks into the attitudes behind the flexibility and rigidity of the sexual division of labour in both the community and the household. Chapter two surveys women's work by using time-use as opposed to the simpler task-specific approach, arguing: "surveys can reveal daily, weekly and seasonal fluctuations in patterns of labour allocation between and within the household maintenance or between work on and off the farm." Chapter three discusses the value of women's labour, for example, farm production, women's contribution to household incomes, their control over returns and the wages they earn. It also outlines various underlying factors which affect women's productivity. Chapter four defines unemployment and underemployment, and looks into the discrepancies among data sources vis-a-vis women's labour force participation. The final chapter summarizes the findings and identifies various implications for research and policy, using various concepts and indicators which the author discussed throughout the book.

Sachs, Carolyn E. (1983) The Invisible Farmers: Women in Agricultural Production. Totowa: Rowman and Allanheld

Sachs investigates the historic roots of patriarchy on the family farm, and women's systemically undervalued role in agricultural production, in the United States throughout its history. A methodology of historical research and interviews with contemporary farm women explores women's involvement. The twenty-one indepth interviews focus on women farmers who are: 1) widows, 2) single women, 3) women married to men who are not farmers, 4) women married to farmers. These interviews reveal the subjective experiences of women on farms. Two case studies for each interview are presented. The author explains how women involved in farm work have been overlooked because of the impact of patriarchy on the division of labour in agricultural production. Women have often been restricted to domestic work. As a result, they have been kept in a subordinate position. In a feminist approach, the author looks at women's subordination in the sphere of agriculture from a political, class, and gendered perspective. She further examines how religion, science, economics, and the government legitimate this subordination. The book specifically traces women's work in subsistence production in seventeenth and eighteenth century New England to the present to look at transformations in the processes of agricultural production and changes in women's lives. It examines the beginning of the agrarian system, landownership and women, the division in decision making, and effects of urbanization, industrialization, science, and capitalism on farm women. It shows how agriculture in the United States is based on men's control of land, cash crops, machinery, and women's labour. Moreover, Sachs discusses how patriarchy and policies of domestication in the American agricultural system are exported around the world by means of development programs that have subordinated women further in the third world by excluding them from access to modern agricultural techniques.

Monson, Jamie and Marion Kalb eds. (1985) Women as Food Producers in Developing Countries. Los Angeles: University of California

Authors from different countries illustrate the important but undervalued role which women play in food production around the world. Chapter one gives a brief overview of the issues, focusing on the marginalization of women through the modernization of agricultural production and marketing, and the loss of hundreds of jobs due to the Green Revolution. Chapter two examines new trends in labour and productivity on family farms/firms in the United States and their potential use in the South. Chapter three exposes some of the discrepancies which exist in official statistics of women's work by using examples from many countries. The next two chapters examine female-dominated business in Ghana and women's roles in livestock production in the Amazon region of Brazil. Chapter five examines the politics behind women's access to resources in Kenya, focusing on the conflict between national level institutions and local practices and power of women's organizations, as well as how male-biased resource distribution inhibits change. The publication concludes with a play entitled A Woman Has A Voice: "Theatre is used here as a medium of expression for education and understanding of the complexity of change facing rural agricultural communities in Africa."

## Organic and Sustainable Agriculture

Christianson, Russel (1988) "A Marketing Plan for Sustainable Food Systems" (unpublished paper)

This document begins with some statistics and facts that show how the North American food system is grossly unsustainable. The author points out that it is not enough just to introduce organic foods into the mainstream foods system because they simply become a luxury only affordable to the affluent. Sustainable agriculture requires empowerment though collective action, decentralization of production and distribution, and a nurturing relationship with the environment rather than an exploitative one. Christianson develops vision and mission statements for a sustainable food system based on a list of the values that characterize it. Some measurable objectives of a sustainable food system identified by Christianson include: increasing the organic share of the food market, obtaining a high degree of return on investment for farmers, composting any food that is wasted, developing a high percentage of bio-degradable and recyclable packaging for organic producers, decreasing the petro-chemical inputs into agriculture, developing a code of ethics for a just and sustainable food system, lobbying to have valuable farmlands protected from the encroachment of development, lobbying government to financially support organic agriculture and related research, and integrating values of sustainable food system into education at all levels. The publication provides a "situation analysis" to assess the opportunities and constraints presented by the current situation for the development of a sustainable food system. The paper concludes by outlining a three-component market plan and then discusses the implementation of this plan, stressing the need for all interested parties to work cooperatively, think globally and act locally.

Ebenreck, Sara (1983) "A Partnership Farmland Ethic" in Environmental Ethics, Vol. 5, Number 1

Ebenreck uses the concept of "stewardship" in order to launch a new way of viewing the relationship between humans and the land based on the land having equal rights with its farmers. The problems inherent in the language of "rights" are discussed. She then goes on to build a model of partnership with three principles based on mutuality of "use" or "working with", which she then applies to agricultural practices.

"Organic Agriculture Study" Fredericton: Baseline Market Research Ltd. (1988)

This publication is a comprehensive market research report conducted for Agriculture Canada. It assesses the characteristics of the current market demand for organic foods and the potential for growth of the market in the future by gauging public opinion, perception and attitudes toward organic foods, as well as identifying who are the current and potential consumers. The research is conducted through a literature review, observation focus groups, and a national survey of urban households. The findings show that most people are at least aware that organic foods are healthier than commercial products since they are relatively chemical-free; that consumers of organic foods tend to be the younger, more educated, upper income, urban dwellers, based on their knowledge and concern about the harmfulness of chemicals in commercial foods; people in general are in favour of having organic foods more readily available; potential consumers are primarily the current consumers; that growth of the market will depend partly on setting prices that do not exceed 25% higher than commercial products; and finally that growth of the market is expected to benefit mostly farmers' markets rather than health food or grocery stores.

## Part F: Biodiversity

Shiva, Vandana et al and the World Rainforest Movement (1993). Biodiversity: Social & Ecological Perspectives. London: Zed Book Ltd.

This collection of essays from the World Rainforest Movement challenge a publication by the World Bank, the IUCN, the World Wildlife Fund and the World Research Institute which focuses biodiversity erosion as a Third World phenomenon which can only be controlled by the industrial North. The essays present the solutions in the North and the problems in the South. The authors of Biodiversity argue "that the roots of the genetic erosion crisis lie in the industrial system of the North. They point out that Third World peasants and forest dwellers, who have been the guardians and beneficiaries of the world's biodiversity, could have their roles jeopardized by the incessant "need" of the North "to turn life forms into private property." Vandana Shiva, a leading ecofeminist, physicist and philosopher, also points out the dangers in emerging biotechnologies which create uniformity in production or monocultures. The essays outline the impacts which biodiversity conservation schemes from the North have had on indigenous populations, explore the underlying economic and political causes of the loss of biodiversity, and profile the real preservers of biodiversity: the NGOs, indigenous peoples, women's grass roots organizations, and "ordinary farmers."

The Navdanya Team (1994) Cultivating Diversity: Biodiversity Conservation and the Politics of the Seed New Delhi: Research Foundation of Science, Technology and Natural Resource Policy

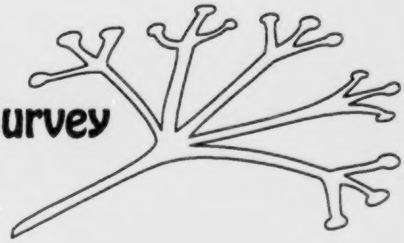
This report is the first in a series of research papers which published on the issues of biodiversity erosion and the social and ecological impacts of monocultures in the forestry agriculture sectors of India. The first chapter of this report looks at the economic, ecological, nutritional and political importance of conserving biodiversity in farmers' fields. Chapter two outlines the many vulnerabilities which exist in the contemporary seed supply system due to the movement away from indigenous seeds brought about by the Green Revolution as well as the privatization of seeds and patents. The third chapter defines the importance of people's participation in the conservation of biodiversity and the work of Navdanya in strengthening people's knowledge and abilities to maintain seed biodiversity. It describes traditional agricultural methods such as in-situ conservation, crop rotation, cropping patterns, and the conservation of indigenous varieties as well as the role of trees and livestock in traditional systems of cultivation. The report includes tables, accompanied by drawings, which list trees identified by farmers as having high utility value. The final two chapters discuss how biodiversity is used to produce high yields and internal inputs and the looming extinction of nutritious crops due to biodiversity reduction as well as genetic engineering.

Shiva, Vandana, Vanaja Ramprasad and Radha Holla Bhar (1994) Sustaining Diversity: Renewing diversity and balance through conservation New Delhi: Research Foundation for Science, Technology and Natural Resource Policy

This publication begins with an explanation of the value of seeds in Indian culture. Chapter one outlines the concepts of diversity and sustainable agriculture as well as the displacement of biodiversity by monocultures, new biotechnologies and the world of GATT.

Chapter two discusses the limitations of gene banks and defines how and why in-situ conservation techniques are the most viable alternative. The following chapters outline the work of Navdanya which include planning, reinforcing farmers' knowledge, strengthening documentation, determining where and how to set-up community seed banks, and methods of seed storage and treatment, testing, evaluation and characterization.

# International Survey



## Overview of the Survey

### Purposes

This project was initially conceptualized as a international survey of popular environmental education initiatives. As the project grew and took shape with the active participation of the group members at the Faculty of Environmental Studies, the project ideas themselves were transformed. Tremendous transformative learning took place within the working goup itself as we grappled with the nuances and tensions of designing and producing an **international popular education survey about food**.

We wanted the survey itself to reflect the values and popular education criteria inherent in the overall project of transformative learning through environmental action.

We chose to use cartoons as a key ingredient in the survey format; some cartoons are purposely ironic and satirical in order to use humour to point out contradictions and injustices in the world food system.

We also wanted the survey to validate and celebrate organizations engaged in transformative learning in the context of food production and consumption practices which resisted agribusiness and honoured the land and its peoples explicitly.

We tried to avoid jargon and to keep the wording of the survey as clear and readable as possible given the task of translating it between languages and cultual meanings. We drafted and pilotted several versions of the survey in our attempts to improve its accesibility.

The final purpose of the project included designing and producing a **directory** containing the results of the survey. The purpose of the directory is to make the material available to a wider audience and to act as a networking device to identify exemplary popular education practices around the world.

### Results

The international survey was mailed out to more than 1000 organizations and translated into 3 languages; Spanish, French and Portugese. To date we have received over 100 responses and more trickle in every week. The task of entering, translating and editing every international survey is tremendously time consuming and labour intensive.

We have applied for further funding from IDRC to continue entering, editing and translating the incoming surveys.

The inital process of making sense of the survey results and the feedback from the international workshop participants is outlined in the proceedings report (see attached).

The working group members took the design and production of the directory many steps further by deciding to organize the directory by **bioregions** and land characterisitcs as well as by political and cultural heritages. This, in and of itself, is a unique approach to an international popular education directory and one which exemplifies some of the criteria being established in the field of popular environmental education. The draft of the directory with its accompanying icons and drawings is self-explanatory and illustrates the work better than words can. Please see the attached documents.

# International Workshop

# TRANSFORMATIVE LEARNING THROUGH ENVIRONMENTAL ACTION

## WORKSHOP AGENDA

### MAY 24

| Time | Event | Technique | Person responsible |
|---|---|---|---|
| 9h00 - 9h20 | Official opening of workshop | Oral presentations | BH/MV |
| 9h20 - 10h20 | Introductions<br>• Who we are<br>• Where we come from | Interview style | MV/DC |
| 10h20 - 10h30 | Break | | |
| 10h30 - 11h30 | The Project | Montage | MV |
| | • overview | Oral presentations | MV |
| | • working papers | | ES |
| | • survey | | LF |
| | • case studies | | MV |
| | • video | | DC |
| | • book | | BH |
| 11h30 - 12h30 | Our Workshop<br>• the agenda<br>• the public event<br>• general information/orientation and identification of small group rapporteurs | Participatory process | DC |
| 12h30 - 14h00<br>*(12:30 - 2:00)* | Lunch | | |
| 14h00 - 15h00<br>*(2:00 - 3:00)* | Transformative Learning<br>• views and definitions<br>• criteria selection | 4 small groups | Facilitators |
| 15h00 - 16h30<br>*(3:00 - 4:30)* | Collective analysis of criteria and definitions | Plenary | MV/DC |
| 16h30 - 17h30<br>*(4:30 - 5:30)* | Free period | | |
| | **PUBLIC EVENT** | | |
| 17h30 - 18h00<br>*(5:30 - 6:00)* | Wine and Cheese | | |
| 18h00 - 21h30<br>*(6:00 - 9:30)* | "Transformative Learning Through Environmental Action: A Public Discussion" | | |

# TRANSFORMATIVE LEARNING THROUGH ENVIRONMENTAL ACTION

## WORKSHOP AGENDA

### MAY 25

| Time | Event | Technique | Person responsible |
|---|---|---|---|
| 9h00-10h30 | Case studies<br>• Brazil<br>• Canada | Oral presentations followed by half-hour discussions | MV/ES |
| 10h30 - 10h45 | Break | | |
| 10h45 - 12h15 | Case studies<br>• India<br>• Venezuela | Oral presentations followed by half-hour discussions | MV/ES |
| 12h15 - 14h00<br>*(12:15 - 2:00)* | Lunch | | |
| 14h00 - 16h00<br>*(2:00 - 4:00)* | Case studies<br>• Sudan<br>• Germany<br>• El Salvador | Oral presentations followed by half-hour discussions | MV/ES |
| 16h00 - 16h15<br>*(4:00 - 4:15)* | Break | | |
| 16h15 - 17h30<br>*(4:15 - 5:30)* | Thematic synthesis | Plenary | |
| 19h00 - 21h00<br>*(7:00 - 9:00)* | Reception<br>Home of Darlene Clover and Budd Hall, 203 Concord Ave. | | |

### MAY 26

| Time | Event | Technique | Person responsible |
|---|---|---|---|
| 8h30 - 17h30<br>*(8:30 - 5:30pm)* | Study visit to Six Nations Community, Brantford, Ontario<br>Continuation of Criteria Analysis | | |
| | Free Evening | | |

# TRANSFORMATIVE LEARNING THROUGH ENVIRONMENTAL ACTION

## WORKSHOP AGENDA

### MAY 27

| Time | Event | Technique | Person responsible |
|---|---|---|---|
| 9h00 - 10h30 | Analysis of survey results | Plenary | LF/CC |
| 10h30 - 10h45 | Break | | |
| 10h45 - 12h30 | Collective analysis of Treaty and education materials | Plenary | |
| 12h30 - 14h00<br>*(12:30 - 2:00)* | Lunch | | |
| 14h00 - 14h40<br>*(2:00 - 2:40)* | Revisiting the criteria | Small groups | |
| 14h40 - 14h50<br>*(2:40 - 2:50) .* | Break | | |
| 14h50 - 15h45<br>*(2:50 - 3:45)* | Collective analysis | Plenary | MV |
| 15h45 - 17h00<br>*(3:45 - 5:00)* | Networking around environmental education, transformative learning and environmental action | Plenary | MV |

### MAY 28

| | | | |
|---|---|---|---|
| 9h00 - 10h00 | E-mail as a network tool | Plenary | RO |
| 10h00 - 10h15 | Break | | |
| 10h15 - 11h00 | From Rio to Copenhagen to Beijing | Plenary | MV |
| 11h00 - 12h00 | Evaluation and future work | Plenary | MV/BH |
| 12h00 | Closure | | |

# AWAKENING SLEEPY KNOWLEDGE
## Proceedings of the International IDRC Workshop
## Transformative Learning Through Environmental Action

May 24-28, 1994
OISE, Toronto, Canada

## Introduction

The International Workshop took place from May 24 - 28, 1994 at the Ontario Institute for Studies in Education (OISE). This workshop was an integral part of the "Transformative Learning Through Environmental Action" project and served as a forum for exploring the ideas expressed in the seven case studies from Sudan, India, Germany, Brazil, Venezuela, El Salvador, and Six Nations, Canada, and the four working papers which were produced by the coordinating team in Toronto. The biggest challenge of the workshop was to stimulate open discussions and interaction to draw out the unique and common aspects and experiences of each case study. This report represents the debates and discussions inspired by participation in small group sessions, plenary sessions of collective analysis and a solidarity/study visit to the Canadian case study. The title of the report "Awakening Sleepy Knowledge" comes from Omar Ovalles of Venezuela. It pertains to the knowledge that people have within themselves but often do not use because they do not understand it as knowledge.

Many thanks are extended to the support given by the graduate assistants to the work of this project and particularly their valuable assistance with the workshop. During the workshop the graduate assistants made photocopies, kept records of the meetings, designed certificates, typed syntheses and patiently answered questions and smoothed away concerns. In addition, our sincerest appreciation and thanks go out to our international guests who took time from their busy lives and travelled so far to make this workshop such a success.

CEMINA, Faculty of Environmental Studies (FES) at York University, and the OISE Transformative Learning Centre wish to express their appreciation to IDRC for having provided financial support for this workshop.

## The Participants

Below is a brief list of the various groups of people who participated in the International Workshop. A full list of participants in the project is included in the Appendices of this report.

- Five (5) members of the Project Coordination Team
- Seven (7) Case Study Authors
- Three (3) graduate students from the Faculty of Environmental Studies, York University
- Two (2) graduate students from OISE
- A four (4) person Video Team:
- Administrative Officers and support personnel from FES and OISE

## Objectives of the International Workshop

The key objectives of the International Workshop were:

- To deepen the participants' understanding of how to strengthen the learning component of environmental/ecological action;
- To identify the transformative learning processes, programmes, practices, methods,

techniques, materials and tools used in environmental action;

- To develop a set of criteria for transformative learning through environmental action;
- To analyze the role of transformative learning in the case studies;
- To learn about and articulate regional initiatives in transformative learning through environmental action;

## Methodology

In the months preceding the International Workshop, the Coordinating Team in Toronto and Brazil prepared four conceptual/working papers, an international survey which was produced in English, French, Spanish and Portuguese and mailed out to approximately 5,000 people around the world, and set-up an e-mail network with a private conference "Transform" for internal use. The international participants prepared case studies, participated in the survey, and reacted to the conceptual papers. The International Workshop brought all the different ideas, papers, studies and people together for a five days. The workshop was a participatory process which employed a variety of popular education techniques. It was facilitated primarily by Moema Viezzer of CEMINA, Brazil, although all participants were given key roles. The workshop consisted of written and verbal presentations, an exhibit of educational materials used by the case study authors, small group sessions, collective analysis exercises, a study visit to the Six Nations Community, role playing, music, gift giving and verbal and written evaluations of the workshop.

## The International Workshop Agenda

The first day of the workshop focused primarily on getting to know one another through talking and sharing work and visions of transformative learning. The focus of the second day was to listen to presentations of the case studies and to synthesize what had been said. Day three involved a study/solidarity visit to learn more about the Canadian case study. The central focus of the fourth day was to revisit ideas put forward on the first three days. Day five was about capturing the processes, practices, techniques, materials and tools used in transformative learning through environmental action and evaluating the work done over the past week.

The workshop consisted of various components. One component was small group sessions of approximately four people in which one person acted as facilitator and another as reporter. Groups reported back to the larger group and everyone engaged in collective analysis. Another component was presentations of the case studies by each of the authors. These were done verbally with the support of slides, videos and overheads. One of the presenters engaged the participants in role playing session in an attempt to demonstrate some of the problems which he encountered in his work. Each presentation was followed by an synthesis by two people which focused on the questions 1) What has to be transformed? 2) What does transformative learning mean to us? 3) What are the indicators/signs/signals/evidence that transformative learning is taking place? Day three was a study/solidarity visit to the Six Nations Community to experience first hand the work which was taking place around that case study and listen to elders in the community of their experiences, concerns, visions and needs. The international survey and the viability of an e-mail network in global environmental education were the focus of the morning session of day four. In the afternoon, participants listed key elements from the case studies. The final day of the workshop contained a process to understand the various elements of transformative learning used in environmental action and an evaluation.

The entire workshop was recorded both on video and audio cassettes. See Annex B for a copy of the International Workshop Agenda.

## Opening of the International Workshop (May 24)

Moema Viezzer, Darlene Clover and Budd Hall opened the workshop by welcoming everyone to Toronto and more formally into the project. Budd Hall led participants in the song "This little Light of Mine" which originated in the American civil rights movement in which Fanny Lou Hammer and other women referred to each person as "little lights".

### Introductions

Group introductions on the first day took the form of interviews. In pairs, participants interviewed one another, asking questions about each others lives and work. It was then the responsibility of each interviewer to present the information to the larger group.

Budd Hall defined the key purposes of the international workshop as:

- to look at "learning" and how it happens within an environmental context
- to use food consumption, distribution, production and biodiversity to identify root causes of the environmental crisis
- to better understand the world to which we are connected by looking to grassroots initiatives and movements such as the women's and environmental movements for guidance
- to strengthen our own educative practices in the world we work
- to define what transformative learning is and the role it plays in environmental action work
- to discuss how computer networks can be used in our work
- to learn more about the different kinds of educative practices, processes, techniques going on around the world and the materials and tools used in transformative learning

Participants then engaged in a dialogue which identified issues and concerns they have encountered in their work. Moema Viezzer reflected on the Rio UNCED meeting and its failure to address the root causes of the environmental crisis which lie in contemporary agricultural practices and not in poverty which is merely a consequence of these practices. She expressed the notion that in terms of educative work, nothing is local, "the global is in the local" because influences from the global systems and policies are felt at the grassroots.

Vanaja Ramprasad from India put forward questions which became an important element of small group discussions: Who should be learning? On whom should the real focus of education be?

Marta Benavides suggested that the workshop should encourage open sharing and focus not only on the notion of learning but also on unlearning some of the "practices and attitudes which "we take as a given in today's world." She noted that the Environmental Education Treaty developed in Rio was a good frame of reference and could provide a starting point to begin our work.

In reference to patents on nature and knowledge, Marta pointed out how rich countries have stolen and patented for centuries the knowledge of indigenous peoples around the world which had been cultivated over thousands of years. Teresa Moreira stated that it is "now a strategy of indigenous peoples in Brazil to hide their knowledge from those who come, to save that knowledge for their own communities." Vanaja affirmed the need to raise public awareness around the patenting issue and its implications for environmental health, sustenance and survival.

Leesa Fawcett ended the session by affirming that "what we do to our food, we ultimately do to ourselves".

## The Agenda

This session was followed by an examination of the workshop agenda for suggested changes. Some members felt that more time should have been included for non-formal South-South sharing discussions. It was decided that these would take place over the two hour lunch and during the free evenings and that this would be taken into account in future workshops. Omar Ovalles suggested that each participant contribute a transformative learning experience in which everyone could share sometime during the workshop. José Zarate facilitator of the Six Nations Community project concluded the morning session with a brief overview of the what would take place on the study visit on May 26.

## Transformative Learning: Views, Definitions, and Criteria

Ed Sullivan began the afternoon session by sharing the definition of "Transformative Learning" that the Toronto group had produced.

> The study understands transformative learning as a process of learning, whether informal or non-formal education, which begins with the daily lived experiences of women and men living in communities and is linked to changing the root causes of environmental destruction or damage. It is also concerned with knowing ourselves as a mammalian species trying to live more lightly, cooperatively and creatively in the biosphere. Learning implies dynamic, life-long processes of discovering and re-discovering what we know about nature, and how we live and teach and learn from one another within our differing environments.

Sandy Greer noted that "transformative" depends on who we are and where we live and she advocates "critical thinking". Marta noted how the mass media is "transforming or turning us all of us into robots...therefore let us be mindful that it is not so much what we transform but rather that we are being transformed by the use of such." Ed talked about the role of transnationals and agro-business in the environmental crisis and mentioned a chapter in a book by Vandana Shiva and Maria Mies entitled Ecofeminism which focuses on liberation from consumerism. José and Marta reflect on the term "empowerment" noting that the indigenous peoples are born with power and that this term was debilitating because it affirms that some people have a given power, and they are the ones who can give it to others. There was a general conversation regarding the power of language and an understanding that words such as "discovery", "alternative" and "empowerment" need to be substantiated by those which best express the historical realities and facts.

A key focus of the workshop was the small group discussions and the collective analyses that followed. Participants moved into small groups to discuss the three key questions. The appointed reporter of each group recorded the discussions, noted them down on flip chart paper and pasted them to the walls to share with the larger group. The questions and answers which were analyzed in a plenary session which followed the small group discussion are outlined below.

**What Has To Be Transformed?**

- the life conditions of many peoples around the world
- the notion of survival in deteriorating conditions
- the emergence and encroachment of desertification
- the relationship between climate change and social change
- the idea of mono-culture, mono-production of food, trees and knowledge, mono-solutions, mono-education, and mono-globalism to the idea of diversity of cultures, productions, solutions, and learning
- the lack of understanding around the link between globalism and localism
- binary thinking
- ideas of "modernization" and "development"
- societies' relationships to the environment and how we view nature
- the passive or "sleepy knowledge" that was passed to us from our heritage, but repressed by society must be awakened.
- the devaluing of cultural and environmental heritage
- non-critical ways of thinking
- our lack of understanding or use of our bodies and senses
- discriminatory and exclusive language
- understanding the cultures of countries we visit
- use of the word "empowerment"
- lack of respect for indigenous perspectives and knowledge
- co-optation of traditional knowledges for use and abuse by the dominant society
- our understanding of who must be transformed: we ourselves must go through the process of transformation
- believing that environmental problems begin in the South:we need to begin with the North
- our way of thinking - seeing ourselves as facilitators rather than leaders
- lack of emphasis on past spiritual values, and spiritual values between humans and nature
- creating two sets of conditions: one for the oppressed and the other for affluent groups
- government policies, military, police, bureaucracy, multinationals, consumerism, formal education, mainstream media, and various elite groups against transformation
- technology which only benefits large farmers
- production practices which create inequalities
- destructive biodiversity practices
- multi-national corporations buying small farms
- calling seeds by their names, rather than by numbers in a gene bank
- present ways of crop production and farming practices
- relationships between men and women
- the feminization of poverty
- feeling that women always "need" education rather than understanding their capabilities as

environmental educators and communicators
- the marginalization of women in society
- local and global marketing systems
- a world system which breaks down life's processes
- "food refugees" and overpopulated cities
- appropriation of land for hamburgers and food that makes us sick
- the relationship between production and reproduction
- the wastefulness of the middle class
- wildlife depletion
- segregation of women and impediments to their full participation
- waste production and disposal
- the future, not the past
- consumer patterns in daily life
- present transportation systems - use bikes, not cars
- passive thinking
- food security rather than military security
- caring for oneself
- to learn to educate

**What Does Transformative Learning Mean For Us?**
- it is not education
- new skills
- new ways of living, doing and working
- recovery of old or marginalized ways of learning
- recovery of women's repressed knowledge
- not linked to levels of schooling, therefore, open and participatory
- recognizing the links between culture and society
- caring for oneself, others, and environment in order to be able to learn and teach
- an awareness of the flowing inter-relationships between humans, other species, and the environment
- changing the root causes of comprehending differently, and then mobilizing for change
- waking up "sleepy knowledge"
- choosing to live and work with groups working for social change
- learning to live with many questions and few answers
- changing our own behaviours so you can influence other small groups of people around you who change others
- it includes: "survive, critique, and create"
- seeing ourselves as resources, and someone willing to ask questions and learn from other people with whom we work
- it is something active: it means fighting to change structures, unequal relations, etc.
- people coming together to share knowledge
- valuing the knowledge of the oppressed is empowering and can lead to strategies for change
- activism and spirituality
- sustainability

- it is a slow process
- people doing and learning to depend on what they are doing
- raising questions at various levels
- constructing a theoretical framework for self-change
- identifying and stopping environmental damage
- respecting biodiversity
- calculating production in diversity rather than in high yields
- participatory evaluations
- using theatre, role playing, puppet shows, music, dance and movement
- an "in-between" scientific model and organic model
- recuperation and restoration
- revealing and uncovering
- respect for the knowledge of farmers themselves
- gender sensitivity and consciousness of the role of women
- in-situ education
- not sending people to the city to learn, but building learning into the rhythm of life and work
- celebration
- openness to many ways of learning
- conservation
- answers from within
- using tools such as slides, videos, photographs and other visual aids that do not rely only on the written word
- believing that when you work with a life giving process, it works with you
- re-inventing agriculture in the cities
- assessing the quality of life
- concentrating efforts on women as families because they are the poorest in society
- recognizing that women are the preservers of culture and the environment
- seeing women as the first environmental educators
- identifying the different uses of natural elements like the palm tree
- struggling with issues of gender
- rescuing, reviving, and revaluing the palm
- adapting each day to different circumstances
- making connections between the nature and the knowledge of women - ecofeminism
- reawakening cultural values and keeping them alive
- reviving traditional foods
- training people on how to cope with a hostile environment, how to keep water clean, primary health care, and cooking with local materials
- a way of life, interwoven, interconnected - continuity of citizen initiatives
- transforming urban space and rescuing people away from cars
- transforming urban food production
- believing that countries are not poor by nature, but by oppressive human activities
- celebrating life and understanding spiritual needs
- teaching critical thinking
- learning survival skills and walking towards what you fear

- improving living conditions in a way which is in harmony with the earth
- valuing Mother Earth by understanding that the earth is there to enjoy, not destroy

**What are the Indicators/Signs/Signals/Evidence that Transformative Learning is Taking Place in the Context of Environmental Action?**

- when actions are changed to respect and practice environmental principles
- new practices
- people getting involved in actions
- making new connections
- understanding the issues of gender
- different ways of seeing and thinking
- the questions that are asked
- connections made between what I mean and how I say it.
- democratic production of knowledge and action
- when people begin to raise questions about living conditions
- when people decide to act without requiring outsiders
- when consumer activity changes
- when farming practices begin to change from high-yield production to sustenance farming in tune with nature
- conservation of biodiversity
- organic farming
- equality between men and women
- "seed is the sign"
- the development of critical thinking by examining history
- affirming our past through tradition
- sharing with others - networking
- large gatherings in protest of GATT and seed monopolization
- total understanding of GATT and its repercussions
- farmers gathering and forming small collective organic farms
- natural diversity flourishing
- people turning down chemical pesticides and fertilizers
- women and men working together in gardens and discussing vegetables
- people recycling organic produce and garbage
- men staying to re-organize lives instead of running away
- children sharing roles once ascribed only to one gender or the other
- academics learning from those who have traditional knowledge
- people sharing and not buying what they don't need
- resistance of people
- creation of new values
- new approaches and demystification of global systems and government policies
- participatory research methods
- questioning of modern science and technology
- valuing natural elements which were important to a culture
- the diversity of peoples involved in the transformation process

- continuing to learn each day
- laws being put in place by local citizens to better the community: people bringing violators to court
- understanding the value of wildlife
- understanding the importance of pure, clean water
- people using local resources and local solutions to local problems
- roads closed to traffic
- bicycle lanes and parks
- people changing eating and buying habits
- peace agreements
- the nurturing off spirituality
- bringing communities together
- cooperative farming systems
- a valuing of agricultural knowledge
- integrating family and community
- growing a variety of crops
- people having confidence in what they put in their mouth - not having to eat food with a lot of poisonous chemicals
- appropriate technologies and farming techniques
- local markets, selling local produce

## Summary of the Plenary Session

During the plenary session participants highlight and elaborated on some of the key points they had made. The first of the small groups to report back was facilitated by Leesa Fawcett with Omar Ovalles acting as rapporteur. Omar provided a brief explanation of how he viewed the difference between indigenous societies and colonial societies. He felt that part of indigenous knowledge is what he termed "sleepy knowledge" because only part of it is actively used because in colonial society such knowledge is not allowed. Omar believes that the knowledge is not lost, it need only be awakened. Leesa stressed that in order to transform we must re-acknowledge our physical bodies and our senses. Elisabeth Meyer-Renschhausen noted that transformative learning is learning about ourselves and our relationship to the environment. In connection with Leesa's remarks, she stated that "we can learn by body awareness by becoming more conscious of how we use our senses."

The second group was facilitated by Darlene Clover with Veena Gokhale as rapporteur. Vanaja Ramprasad, a member of the group, distinguished between "privileged" and "impoverished" groups and how this situation is kept in place by specific economic and social structures. Her vision is that both of these groups need education but each of a different kind. She also noted that "People's knowledge has been devalued". Teresa Moreira noted that people's knowledge must be re-established if true transformation is going to take place.

Group three's facilitator was Budd Hall and rapporteur Naila Hijazi. This group elaborated on the need to transform life conditions by looking at daily life. Life has become a matter of survival and coping in deteriorating environmental conditions such as desertification. They noted that there must be a transformation from "mono" regarding culture, production, education, globalization solutions to more culturally diverse practices in all of the above. In addition, the group felt that binary thinking must me transformed. Similarly, modernization and "development" notions must be transformed.

The final group was facilitated by Ed Sullivan with Sandy Greer as rapporteur. This group highlighted that transformative learning means that indigenous perspectives must be respected and also that we must be aware and challenge how these perspectives have been "co-opted" by those in power for their own agenda. They also emphasized the importance of people's spirituality.

This group also noted that "outsiders" when placed in the role of facilitator or "enabler" must see themselves only as resource people, as well as someone who can learn equally from the local people with whom we work. In other words "our way of thinking can and must be transformed". Moema noted that often we "tend to be colonized in our ways of thinking and action which we don't often tend to recognize."

Moema concluded the days discussions with a quote by a Colombian indigenous woman who spoke at the Rio Global Forum:

> Indigenous cultures are re-emerging
> while White cultures decline

**Evening Public Event "Transformative Learning Through Environmental Action: A Public Discussion**

On the evening of May 24 a public forum was held at OISE in which over 100 people participated. The event was publicized in OISE News, Now Magazine, CIUT, "The Atkinsonian" and "Excliber" magazines of York University. In addition, notices were sent out to a number of environmental groups, schools, development organizations and education groups. The purpose of the evening event was twofold. First, to give members of the Toronto community working in the fields of environment and education the opportunity to learn more about various environmental education initiatives taking place around the world. Second, to give the international participants the opportunity to share environmental problems in their countries as well as their educative practices and processes, with a larger Canadian audience.

The evening began with welcomes by Budd Hall of the Transformative Learning Centre, Moema Viezzer of Rede Mulher and CEMINA, Leesa Fawcett of York University Environmental Studies and Malcolm Levin, Assistant Director Academic of OISE. This was followed by a general overview of the IDRC Transformative Learning project which was accompanied by a visual presentation. The visual presentation was comprised of a montage of images projected onto three separate screens which hung from the ceiling in the middle of the seminar room. The images were accompanied by the sounds of nature such as wind, rain, the singing of birds as well as different types of music from around the world. This presentation captured images from the case studies as well as other scenes of the natural world, both its beauty as well as the violence and destruction taking place.

The visual presentation was followed by five to seven minute presentations by the case study authors. In their presentations they touched on the various social, cultural, and environmental issues and educative practices in their respective countries.

"In India what is taking place is the commercialization of individual farmers' knowledge without acknowledgement to the farmer. In fact, farmers do not have intellectual property rights to their own knowledge. There has been a consistent effort over the years to patent knowledge and life forms. However, people are now awakening to this fact. Navdanya, a grassroots organization is working with farmers to learn to protect their environments, the natural biodiversity and their knowledge."

Vanaja Ramprasad

"People are the major asset of El Salvador. There is no equality or quality of life if the people have no power. Our organization educates for the wise and effective exercise of power by individual citizens and communities for only then can we aim to have sustainable peace from practices which result in sustainable societies.

Marta Benavides

"Through education we are reviving ancient and ecological food, medicinal and architectural practices. We use local materials and tap existing knowledge in the communities. Environmental education has a key role to play in the cultural heritage of the Amazon."

Omar Ovalles

"Berlin now consists of huge alternative organic food markets. Through education, thousands of communities buy and produce organic produce from Germany. Lifestyles have changed and many live in commune like structures with few luxuries."

Elisabeth Meyer-Renschhausen

"Parts of Sudan are inhabited primarily by tribal cultivators and nomadic tribes. Due to desertification and other environmental problems people were losing their traditional ways of life. To prevent this, people are coming together and initiating their own environmental action from within the tribes in reference to food production and preserving biodiversity."

Naila Babiker Hijazi

"Brazil is a land of plenty with hunger everywhere. We are organizing a national campaign against hunger, poverty and for life. The educational component of our work focuses on raising self-esteem in order to raise productivity as well as recognizing the valuable role women play in society as the sustainers of life."

Teresa Moreira

"Our project on the Six Nations is innovative because it brings together indigenous peoples of Canada with immigrants residing in Hamilton in a common effort."

José Zarate

The evening concluded with an open session in which all were invited to participants could ask questions and/or share their own experiences and work with the larger group.

## Presentation of the Case Studies (May 25)

The May 25th session was organized around the case studies presented by each author. Presenters concentrated on the socio-political context in which they worked, environmental conditions, global and national economic systems, problems of food distribution, consumption and production and biodiversity as well as the transformative learning aspect of their respective case studies. The written studies had been shared previously with all participants, therefore, the presentations merely highlighted some of the key elements of each study. Presentations were followed by a collective reflection which focused on the three key questions of the workshop: What Has to be Transformed? What Does Transformative Learning Mean to Us? What are the Signs/Signals/Evidence that Transformative Learning is Taking Place?

## Navdanya - A Grassroots Movement to Conserve Biodiversity and Sustain Food Security

The first presenter was Vanaja Ramprasad of India who gave a brief overview of her project. Copies of the full case studies are included under the section "Case Studies" in this report.

"In India during the inter-war period, the deadly combination of increasing export surplus, decline in food availability, and the fall in agriculture production in terms of trade owing to the great depression, left many of the rural poor famine vulnerable. It was around the same period that USA and Canada were the main players in the world wheat market and this was the era of food aid to developing countries. India sought to solve the food need through imports of food grains. However, with technical inputs from the US, India also set-up several universities and trained its scientists in the reductionist model of agricultural technology. This paved the way to the much acclaimed Green Revolution in the country which essentially concentrated on higher yields of wheat and rice. Within two decades the new technology which was based on high external inputs of chemicals and water, proved to be a short lived euphoria, as the fall out of the technology was the preparation of mon-cultures and erosion of biodiversity.

The Navdanya programme aims at widening the conservation base to include farmers - the primary custodians of biodiversity. While efforts at ex-situ conservation of genetic resources in high-tech centralized gene banks have been commendable at the national and international levels, conservation at the farmer's level has so far had inadequate attention. Biodiversity conservation at the farmer level differs from the ex-situ conservation measures in two fundamental ways. The former is based on horizontal networking, the latter on a vertical flow. Farmers' conservation involves a two-way flow of biodiversity while ex-situ conservation involves the flow of biodiversity from farmers to gene banks. Conserving biodiversity at the farmer level is necessary for ecological, economic and political reasons.

Diversity in cropping means effective nutrient recycling, insect and disease resistance, and higher productivity in the long term. At the systems level, Navdanya supports ecosystem diversity, species diversity, farm diversity and varietal diversity. The three components on which in-situ conservation is based are time, location and material. Some dilemmas faced by the programme-genetic diversity are vast and have set limits to the programme. Second, there is the question of incentives. What kind of incentives can one offer to farmers that multinationals cannot? The third is the continuation of organizing the seed supply at the initial stage, while trying to overcome the myth of the productivity of new seed varieties.

Another is the problem of how urban needs control the production of rural farmers. And finally there is no one model of in-situ conservation therefore, each is unique in itself. The educative stages of the seed conservation in which farmers are involved include planning, the collection and documentation of sees, treatment and storage of seeds, testing for seed viability, evaluation, characteristics and multiplication and finally utilization. Navdanya also encourages seed fairs during which farmers can network with each other and share their sees, as well as hold rituals, and ceremonies to celebrate life, strength and biodiversity.

### Collective Analysis

- the entire way of crop production in India needs to be transformed
- the basic goal is to understand reasons for protecting biodiversity of seeds
- in this transformation the role that Navdanya plays between the dominant model and the farmers is key
- the knowledge of the recuperation or restoration of seeds already exists
- respect by and for farmers is a crucial part of the transformational process as well as gender sensitivity and the critical role women play as keepers of the seeds
- in-situ education is built into the natural rhythm of work and life which is an important element of transformative learning
- the "seed is the sign" that transformative learning is taking place in this story
- conservation is a key element of transformation
- people do have the answers - know your history and from there develop critical thinking as to how you understand your history
- affirm the past through ceremonies and celebration but at the same time live in the present
- networking and contact is critical to transformative learning

### Women in Citizen Action: A Struggle Against Hunger and Poverty and in Defense of Quality of Life

The following joint presentation by Moema Viezzer and Teresa Moreira of Brazil began with the song "Viver afinar um instrumento" which became one of the two theme songs of the workshop.

"Brazil, like India, follows a system of monoculture cropping. 70% of small farmers own only 8.5% of the land while 10% of large agricultural farmers own 75% of the land. Much of the food produced in Brazil is lost during harvest and storage which is enough to feed all hungry Brazilian families for two years. As in India, the Green Revolution and colonialism have played key roles in the environmental destruction Brazil now faces. You could say that the Green Revolution is in fact a "White Revolution".

A major political tactic in Brazil to reduce poverty and eliminate crime is "to sterilize women and kill the children who live in the streets instead of recognizing what has brought people to this situation." We find ourselves in permanent political dilemma of how to challenge the strong interconnections between the various mafias, the corrupt politicians and the military. Brazil is in a state of emergency vis-a-vis the hunger situation. Providing jobs within the present economic structure is the central focus of NGOs, trade unions and governments. Decentralization, recovery of values, education and learning and searching for alternative solutions to present-day problems are the central foci of Women in Citizen Action in which we are involved.

Our campaign's three objectives are to work with local associations in Sao Paulo and involve about 50 needy families (95% of which are headed by women), to hold education sessions which focus on local and planetary environmental issues in order to educate, re-educate and transform ways of thinking and behaving and most importantly, to draw create an understanding of the parallels between hunger, environmental destruction and the subordination of women. We are talking about women's rights as human rights and see environmental education as a new social movement that focuses on issues of gender and environment. In all our workshops, when we speak of conservation, we highlight the correlation between monocultures and patriarchy. Production of seeds should mean reproduction of life at all levels including the spiritual. Overconsumption and overproduction does not equate with a concern for life.

The three premises on which the campaign is based are solidarity, self-help and political pressure. How we put these three elements into practice is the challenge. We feel that another key element of the project is to connect through education sessions, people who have sufficient to eat with people who are starving so that there is a deeper understanding of the problem we ALL face in Brazil. In this campaign we work with both men and women but mostly we focus on women because they form the majority of those who live in abject poverty and also because we aim to develop their self-esteem and help them to understand gender oppression, and other elements of monoculture. At first the men did not get involved but now they are beginning to help women in these projects and stay with their families to support and work with them rather than running away which has been the case in the past.

We hope that by the end of this campaign the 50 families involved will be predominantly self-sufficient through growing their own food in organic gardens. In fact, people have begun to reject pesticides which are costly and dangerous. In addition to the organic gardens we are also helping to revive the traditional "multi-mix flour" used in many indigenous dishes.

We are also hoping that transformative learning will take place at the academic level and schools will begin to teach the importance of biodiversity conservation and organic farming. We are encouraging local leaders to speak in schools to middle class students to raise consciousness. We also focus on the notion of nutrition. Not only the poor are malnourished but also the rich due to their fast-food diets. We are encouraging the growing of organic produce for self-sufficiency, a source of income as well as nutrition for other communities. People who come to cities have a great deal of knowledge about the land and agriculture and this is what we hope to retrieve."

Collective Analysis

- what has to be transformed is the notion of monocultures because it means food refugees and over-populated non-sustainable cities
- important to make the connection between subordination of women and environmental issues
- if you work with life giving processes it works with you
- people becoming autonomous and self-sufficient
- transformation in the way women and men work together
- people are becoming more aware that their situations are political and affected by societal

notions of the role of women and men

- the family and community as units which will bring about change
- people are beginning to reject pesticides and believe in the value of organic produce
- women and men working together to plant seeds
- men are staying with their families to help with the gardens instead of abandoning them to work somewhere else
- rediscovering and sharing traditional knowledge of the land
- raising consciousness among the higher classes
- encouraging self-esteem in women

**Transformative Learning in Marginal Areas: Indigenous Migrants in an Amazon City**

Omar Ovalles of Venezuela made a few opening remarks about the project on which he is working and then engaged the group in a role playing exercise to demonstrate some of the problems which he encounters in his work.

"I have a lot of questions: I do not have a lot of answers. There are approximately 40,000 people from 10 different indigenous groups living in poverty in Amazon cities. Anthropologists are not interested in working with these people who live in poverty on the fringes of the cities because they only wish to work in the jungles with people who they deem interesting or exciting. The urban indians are no longer true indians to them.

In working with them we try to use an interdisciplinary approach and participatory research methods. We have developed surveys which are more participatory and which people can understand.

In our project we focus on palm trees because traditionally they were sources of food, housing, medicine and mythology. It has become the symbol of transformation. We have identified a number of different types and are working with indigenous populations to help awaken their "sleepy knowledge" about the uses of palms. I would like to invite a number of people to join me in an exercise. Through this I hope to show you the issues my students and I encountered when we began to work with on this project with different indigenous peoples, government representatives, school teachers, and university researchers."

Roles

School Teacher

- you work with small children in the Amazon who have many problems with drugs, violence and malnutrition
- you have a low salary and many political pressures
- you would work on an environmental education programme if you had the time

Leader of the Yecuana Indigenous Community

- your people wish to work with the government representative to help their community
- your people have many problems such as illiteracy, unemployment and malnutrition
- knowledge of your own culture has been drastically diminished

Local Government Representative

- you are in charge of various social programmes such as milk programmes for children, providing food for families

- you do not appreciate the university getting involved in your work

Amazonas Project Coordinator

- the project needs financial resources immediately
- the fundraising is very difficult
- the local government invites you to participate in its social programmes
- you must guarantee democratic debates at the university

Leader of the Guajibo Indigenous Community

- you do not believe the promises of the university or the local government of assistance
- you are not interested in being involved in any surveys
- your people also have many diseases, illiteracy problems, unemployment, malnutrition and have lost much of your traditional knowledge

Amazonas Students

- you are studying architecture and environmental education through transformative learning
- you have developed a survey in order to identify socio-economic problems within the indigenous communities
- you would like to help these communities to recuperate their traditional knowledge about the palms for housing, food and medicine

"I would like to thank you all for participating in this exercise and hope you can see some of the problems with which I am confronted. You probably recognize many of these problems as not being very different from those you encounter in your own communities. I find that role playing is an excellent instrument to bring out people's knowledge and find creative solutions to problems. For me, transformative learning is always looking for new methodologies."

Collective Analysis

- changing people's values and attitudes
- using methodologies in questionnaires that "demystify"
- important that people identify themselves with the symbol of the palm which has relevance to their lives
- learning must happen with all the groups involved
- learning about how systems impinge on people's lives
- learning how to adapt to the new environment while recreating traditional ways of living and knowing
- learning must take place in us and how we approach each situation
- many people from many different sectors getting involved
- recovery of palm knowledge
- resistance in the indigenous peoples is a sign that transformative learning is taking place
- keeping things alive
- looking for knowledge outside the university

## El Daen: Environment Conservation in Sudan

Naila Babiker Hijazi of Sudan presented this case study and showed a video which she had brought.

"As you can see in the video, the biggest environmental problem that we face in Sudan is desertification. Because of traditions, it is difficult to photograph women or to get them into videos. Many people in Sudan are impoverished and the nomadic way of life is becoming more difficult due to desertification. Women have been the most affected because men tend to migrate to look for work and women are left to feed and raise children somehow.

The initiative for this project came from the tribal leaders. They were concerned that there tribal way of life was disintegrating due to the migration of young men to the cities to look for work. They are also concerned with desertification which is creeping in from the North and West. Tribal leaders approached the government to say that if they lost their traditional lifestyle they would have to move to the cities and become a burden. They told the government that if they did not want this happen then they would need to help them. They very much wanted to maintain their traditional ways of living. A branch of the Sudanese Society for Environment Conservation was formed in 1991.

Sudan is facing famine. Therefore one aspect of this project is to assist people to produce the traditional food of "sesame cake" which lasts a long time when well preserved. This cake used to be prepared with the "outside knowledge" but it takes all day for the women to grind up the ingredients between two pieces of stone or in a large wooden jar.

Gender awareness is just beginning in the project. A new position has opened for a woman to be in charge of gender relations. Women are involved in securing food and water and are learning about personal hygiene. Women are being encouraged to come together and exchange ways and means of preserving foods. But women are still not actively involved in the planning processes although they are integral to the actions that take place. Also we are doing everything without the assistance of foreign aid. Our actions are adopted to our own environment.

Another element of the project is a code of behaviour towards all living things. This code prohibits people from cutting or burning down large trees, unauthorized hunting of certain species and off season, using certain types of inhumane trapping techniques and so on. The community El Dean was instrumental in establishing these laws and act as watchdogs, turning people into the authorities who violate these laws. People are also learning how to maintain water quality by using sand basins, a traditional practice in the area.

This project is transformative because it begins with the knowledge and initiatives of the people and they develop the project to suit their needs. Workshops, seminars and conferences now deal with issues of population, development, environment and women and gender issues. However, politicians and policy makers still remain unconvinced that more active participation by women would lead to improved living conditions for society as a whole."

### Collective Analysis

- desertification and the deterioration of tribal life need to be transformed
- segregation of the sexes and an understanding of the critical role women play in their societies

- inability of women to participate in projects when they are relegated to the home and not involved in the planning process
- work is being done to create "famine food"
- transformation is taking place through the tribal leaders
- environmental laws have grown out of group action and are therefore more effective
- using locally grown food
- what was needed to transform was how to live in and deal in a harsh environment as well as how to maintain a traditional way of life and show young people that this is a viable alternative, they do not have to migrate to the cities
- people are learning the importance of wildlife and how to keep water clean by using traditional practices
- creating projects with no support from outside the country in areas which are often cut-off from larger society for weeks

Naila ended the session with a passage from the Hadith by the Prophet Mohammed:

> "You will find men who believe they have devoted themselves to God, leave them to what they believe. I instruct you with ten commandments: Do not kill a woman, child or old man, do not cut a fruitful tree or destroy a built place, do not kill a goat or a camel except for food, do not cut down a date palm for burn it, do not hide your wealth or destroy it."

### Berlin and Brandenburg as Centres of Environmental Action: Organic Food Consumption and Organic Gardening and Farming

Elisabeth Meyer-Renschhausen inter-wove a series of slides of different initiatives taking place around Berlin and Brandenburg into her presentation.

"There are a number of grassroots groups working in the field of conservation. There are also a number of citizen action initiatives taking place to prevent the use of the automobile in downtown areas through demonstrations and promote cycling and the use of public transportation. There are now a number of shops around the city which now which sell and repair bicycles when less than 20 years ago there was only one.

Berlin has become a centre for the women's movement and many environmental organizations. It now also contains a number of "bioshops" (organic food shops) which sell only natural products. Over time, people have become more knowledgeable about purchasing natural products and are moving towards vegetarianism. A change in consumer behaviour is becoming more evident in Berlin.

Women are at the forefront of the environmental movement. They have gardening collectives and offer ecological education courses for children on their own farms. They have managed to acquire land such as old railway yards to produce organic gardens because the quality of the soil is poor and therefore not in demand. These gardens are particularly important in what used to be known as "East Berlin" where there is a greater level of poverty and hunger. There is also a movement towards subsistence living as raising quality of life - escaping from the hectic life of needing more and more. Farmers collectives of "ecovillages" are being created around the country and there has been a national outcry to change European monoculture agricultural policies."

Collective Analysis

- subsistence living as the future and not the past
- people transforming consumer patterns in a region
- creating a new way of living
- continuity of citizen participation vis-a-vis organic gardening and bicycles
- reclamation of urban space for people
- transforming urban food production
- many new organic food shops
- changing the quality of life and moving towards a more subsistence way of life
- reclaiming the urban air from noise and exhaust fumes
- purchasing power and changes in daily habits
- changed eating habits
- organic farming as an alternative to poverty and famine
- creation of ecovillages
- call for a change in European agricultural policy
- seeing a subsistence economy as a model for the world

## People's Rights, Environmental Education and Ecological Action for Sustainability in El Salvador

Marta Benavides of El Salvador was the final presenter of the day.

"El Salvador is the smallest in Central America and the continent. Twelve years of civil war has left the country virtually without an ecosystem. The war was largely a product of foreign vested interest. The people of El Salvador had to learn survival skills during the war in order to cope. Survival skills became crucial as war had caused wide-spread desertification, water and soil contamination as well as the erosion of the social and cultural fabric of the nation. These are the most urgent problems that need to be addressed. The social and economic situation and policies are determined by El Salvador's dependency on the structural adjustment policies of the World Bank and International Monetary Fund. Food is very expensive and there is little or no practice of food conservation.

The Instituto Internacional para la Cooperación entre los Pueblos (IICP) is involved in educational programmes and actions related to the development of a National Rural Leadership Network for Quality of Life. One of the goals is to teach people how to be self-sufficient without the need for various types of outside aid which poured into the country during the war and created dependency. Our group plays the role of facilitator in the implementation of a development plan which comes from the communities themselves. For us the university community is merely a resource for information and training. IICP works together with rural communities to find their own solutions to their environmental and community problems. For a successful sustainable community, process we must encourage people to remember what they learned from their grandparents and we are documenting this for them to be shared with other communities. An integral component to the training is celebrations of music, dance and the sharing of traditional histories. Our cultural, spiritual and agricultural work feeds the empty stomachs, supports the community and feeds the soul. The spiritual aspect of life must not be underestimated. Nurturing people's spirituality is seen critical to the educative process for sustainability.

The educative materials we use are ones which people themselves have developed. Through cooperative training sessions for soil and water restoration, family medicinal and vegetable gardens we teach women, men and children (both male and female) nutrition, home economics and cooking. This supports inclusiveness and breaks gender restrictions while developing environmental understanding and practices. We have organized compost piles close to houses and hold sessions on how to and the value of using compost in their gardens. Plants are identified and safeguarded for their nutritional value as well as medicinal qualities. Another key element is to assist people to develop critical thinking techniques to develop awareness about the vested interest they have in rebuilding their ecosystem and their communities. We are trying to revive the survival skills learned during the war and not allow people to become passive. During the war people learned to make themselves invisible: we are working to create a process to make them visible again. Members of the community, through education, are beginning to understand more the political structures and systems which are the root cause of their oppression and they are beginning to speak out and act appropriately.

Women and men are working side by side and presenting a new model to their children. Children of both sexes do all types of work not just those assigned by gender. Often our work is very dangerous because it is a real exercise of power which is what sustainability is all about."

Collective Analysis

- developing critical thinking through education
- raising awareness and self-esteem through respect for traditional methods and histories
- transforming passive ways of thinking into proactive
- taking direct action
- planting gardens and understanding nutritional and medicinal value
- reviving traditional medicines and food practices
- fighting for land re-distribution
- peace agreements are a sign of transformative learning in the various sectors of society
- people learning not to rely on foreign aid
- people taking the lead and control over their lives
- making use of the resources available as well as traditional knowledge
- using the university community as a resource
- reviving a deep appreciation of life through understanding and nourishing people's spirituality and culture
- people making themselves visible, exercising an effective presence
- affirmations of life through music, dance, theatre, games, etc.
- women working side by side with men to create a new model of a sustainable society
- teaching children both "male and female" work

**Visit to the Six Nations Community (May 26)**

Although it was pouring rain participants piled into cars early in the morning and drove for two and one-half hours to the Six Nations Community outside Brantford, Ontario. The case study is the "Community-Based Rural Development Project as a Vehicle to Community Ownership, Empowerment and Cultural Recovery". The purpose of the study visit was to allow participants who came from the various parts of the world, as well as others of the coordinating team, the opportunity to actually visit a case study and share experiences with others working on the project who were not able to participate in the workshop in Toronto.

Upon arrival the group was provided with an excellent overview of the project by Tim Johnson of Plenty Canada and a member of the Six Nations Community. He stated the key objective of the project was to develop economic opportunity for both the Six Nations community as well as many new Canadians who have an expertise in agricultural work and a willingness to work on the project. A key element of the educative process vis-a-vis the Six Nations project was a 20-minute video. The video presented to the participants explained in great detail many of the ideas behind the project. The project involves a cooperative system of farming and values the agricultural knowledge of the immigrants which is not the case in an industrial city like Hamilton. In addition, it integrates family and community and focuses primarily on skills training.

"The project has both social and cultural objectives. It is an integrated agricultural development project which works to improve the lives of the people involved. The project is unique because it integrates the needs of both an immigrant and Native community which is both difficult yet advantageous to both communities.

Plenty Canada's role is to facilitate communities to develop infrastructures to help meet local needs. We began by doing research, and planting test gardens for crops. The project uses Indian food of the Americas known as the "three sisters" which are corn, beans and squash. Community members learn many things from the garden such as patience.

We realized that there is an 11 million dollar grocery market in Six Nations; these groceries are produced outside the community. Even if only 5% of that grocery market is tapped, business is viable. Community members have high levels of education in agriculture, but still can't find jobs. The project uses appropriate farming techniques, rather than shortcut methods, so that the soil will be there for the next generation. As you know in indigenous traditions we must think seven generations ahead. We grow a variety of food. This enables people to have greater confidence in what they put into their mouth. The foods are grown organically so there are no poisonous chemicals.

A report was produced on the project which made three recommendations:

1) to provide training in agriculture related to local food supply for both communities
2) to form a community-based agricultural cooperative
3) to design and construct a farmer's market in the community

The community of Six Nations has about 9,000 people. The development phase of the project started January 10, 1994 and training is being delivered now, in addition to community meetings, and initial development of a farmer's market. The target date of withdrawal of Plenty Canada from the project is January, 1996. They have indicated this date to their funders, but have asked their funders to continue funding the project for a year after.

The notion of creating a farmer's market would mean low overhead costs to rent space for the day for farmers. At present, the community is presently highly individualistic and entrepreneurial, rather than community-based.

The education components are critical, as the community used to be completely self-sufficient until members began migrating to urban areas. By educating the young people and involving them in the project they can see that making a living within the community is a viable life choice. We plan to create an educational or agricultural theatre for the community and guests, to be presented at the market. It will be a multi-image presentation (12 slide projectors, integrated with film and video) because still images stick more in people's minds. We will emphasize the contributions of indigenous farmers, such as corn, potatoes, tomatoes, squashes, different types of beans. We
will start in mezoamerica, where corn was begun to be used by Mayans. They will show how the use of corn migrated north and how types of corn are specific to regions. It will shows how corn was traded between Indian communities, and then all over the world.

In addition we want to use interactive computer terminals and plan to work with the Smithsonian Institute and the National Film Board. Also, we'll hold lectures, combination business and education. We plan to build long-houses with 6 smoke-holes representing each of the 6 nations. The corridors will line up with the sun at a specific day and time of year.

There are presently five trainees and two advisors working on the project and more will join during the summer. The cooperative will lease the land for the community, like in the past, where you got from the land what you put into it. In the summer, they hope to have fruit stands on the highway and to supply fruit to local stores. The strength of the project is its participatory approach. All the initiatives are coming from within the community itself."

Lehman Gibson, Mohawk Elder

Lehman Gibson, a key trainer on the project due to his deep understanding of the plant life around the community and in organic farming, shared some of his views and work with the participants. He works very closely with Iowne Anderson, the project community advisor and long-time advocate for educating young Native people about their cultural heritage. Iowne was unable to spend time with the group.

"I am a strong advocate of the project and have farmed the land here for my whole life. I am active in the traditional government and ceremonies.

We are knowledgeable of natural medicinal plants of the community. We understand that what one plant takes out of the soil, the other puts in. I am an organic farmer. We do not hurt anything and work on a homogenous relationship with the earth. People thank the creator for the things on earth put there to enjoy, not destroy. The earth is mother, because without her we would not exist The moon is our grandmother and the stars our family. We are nothing more than a walking, talking, piece of dirt. My beliefs are not religion, not like from the bible. Everything works together in harmony in the earth, and people should work together too. I cannot say "This is our belief" because I cannot speak for his whole community, so I say "This is my belief."

Our ancestors told us that the European people would come 10,000 years before they came and that they would have to live in harmony with them. It is my belief that this land, Canada, is a place for oppressed people from the world to come. It is a place as a haven to live in harmony.

Transformative learning is all people thinking with one mind. The role of women is important in our society. The clan mother must ensure that there is a homogeneous relationship within her family and to pick a spokesman for her family, or a chief. It is done this way rather than the woman speaking herself, because in his culture, the man is supposed to do the doing and the woman is the strategist. When a man and a woman get married, they form one entity - each incomplete without the other. One can never know childbearing, and the other cannot understand what it is like to have blisters on her hands.

Each nationality is a different family who respect each other. There is never one race against another, but just a couple of individuals who start conflicts for their own gain."

After the presentation, participants joined in a discussion with Lehman, asking questions and sharing some of their own stories. Following this the group journeyed to Lehman's farm where he described some of the Iroquoian plant life around him and some of the practical farming techniques used to work the hard clay soils of Six Nations on the Grand River.

### Computer Networking (May 27)

Another element of the Transformative Learning Project was the setting-up of an electronic mail (e-mail) system in order to facilitate the sharing of ideas and information amongst the participants as well as networking with others around the globe interested in non-formal environmental education. Rory O'Brien of the NirvCentre in Toronto was invited to address the group. The Web network on which Rory works is part of the association of progressive communication, a large international network of progressive or social movement-oriented people who are serving global change and social justice through people's use of technology. Rory has been an advisor to the project from the beginning, helping to begin to use computer networks in international work in transformative learning and environmental action. Web is a component of the project that was initiated to see if it would be possible to communicate with each other each week through the computer from Brazil to India, India to Canada.

"What I hope to learn today is the potential for web in global networking and some of the barriers or problems. With this knowledge over the next year or so we might work towards making use of this new technology. But before I get into finding out where you are all at, let me give you a general overview of where society at least in the North is and soon I imagine the South will also go with regards to these new communications technologies.

You all know that the mass media is controlled by a few very, very wealthy powerful people. For the most part they set the agenda of what people think about and what motivates them to do things and how they live their lives. These new technologies are transforming power relationships. A Canadian communications scholar from Toronto named Harold Innis spent a lot of his life trying to figure out the influence of new communications technologies on power structures. We came to the conclusion that new technologies have the potential to transform power relationships just as the invention of writing had in the distant past.

Today, these media have become digitalized meaning they have all been transformed into producing the communications in a format that can be used by computers. This format was originally "off-text" based but now it is rapidly becoming multi-media. You will hear more the next few years about a multi-media revolution. Multi-media is a merging of video, voice, graphics and text into a solid communications mechanism. About seven or eight years ago, I started at York University, I started studying the new communications technologies from the point of view of social change, thinking about Harold Innis's dictums that change is produced mostly by new communications technologies. And I thought that we should take the new technologies and use them to support alternative power structures as opposed to just letting the people that maintain the status quo keep them that we could help create a new world. One that is a little more equitable, just and benign to the environment. I believe that we have done this with our network called Web in Canada. The network began by linking environmentalists and has spread to peace and social justice activists and the non profit sector. The non profit sector being one that is driven by values rather than by making money and includes organizations of environment, peace social justice, education, health, women's groups, indigenous peoples, all kinds. In the seven years it's been operational, it has continued growing - doubling in size each year. In 1990, we teamed up with six other networks that were doing similar things around the world and formed the Association for Progressive Communications (APC). This association now has sixteen full member networks and fifty partner networks. The partner networks are smaller systems from the South that find the cost of maintaining and operating the network too expensive. All the networks share e-mail, computer conferences, and soon to come, access to online data-bases. The idea is that we create networks in regions or countries and cooperate rather than compete so we will all benefit. We share our developments, collectively pool resources and team up for joint projects.

One of the joint projects I'm sure you will all be interested in is a networking initiative to support the U.N conference on women to be held in Beijing in 1995. The APC is very strong on trying to have gender equality in its staff and outreach. About 30 staff people would go to Beijing for the two weeks and set up a communications system for the conference. The entire contingent would be female - all the technicians would be female which is a symbolic that this type of technology need not be just boys and their toys. It is important for social justice in many respects. Those of you who are working with women's groups and women's networks in your own countries might be very interested in finding out more about it. Unfortunately this is an online networking initiative which means that if you wish to participate in this particular initiative you have to get an account on one of the computer networks that is affiliated with the APC. I have some material here that will give you an idea of the kinds of organizations on line and what are some of the computer conferences supporting the initiative and you have access to online. We did the same kind of thing for the Earth Summit in Rio. The UN put all of the official documents on the network and all of the country stances and policies which was an incredible wealth of information. It helped to prepare NGOs for the Summit because they were online and communicating. We hope with the women's conference to produce a network of women's organizations and women who are online around the globe who will prepare for the conference and use the conference as a springboard into a whole new range of networking initiatives. Because they have the communication technology now, those initiatives can be better co-ordinated for a fraction of the cost. If you consider the amount of money it cost to bring you all here you can supplement these face to face meetings with ongoing communications, then you can share a lot of what you are doing over a longer period of time. What you have learned and write about can be shared. It is important to get on line and to get networking because the world is going to get online.

I sit on an advisory council for the Ontario government and part of my role is to spend $100,000,000 in a fund to create networking initiatives. Not networking initiatives like mine, but a lot of the multi-media kind of things. The NirvCentre put in a proposal to this fund and to link all Ontario's environmental groups. It also would allow for development that would help not just Ontario groups but all the environmental groups in Canada and our partners in the APC. That project was a $3,000,000 project and was recommended just last week and was passed by the Treasury Board of Ontario."

Synthesis of the Plenary Discussion

1. Where does Ontario get $100,000,000 to spend like that? Who is really paying for those $3,000,000 that you are going to use to network? Is that within the concept of sustainable development?
2. I feel that the resources are coming from our people, The South. How are these monies available here when there is no money available for our peoples in our countries? These are the things that concern me. I am not against advancement but I want quality of life for my people and that is where I am coming from. All these co-operative efforts can be very good if they don't depend on our people paying by living a lower quality of life.
3. In the South you can find the most advanced technology including bombs. The military is so sophisticated now that they can provide contracts for peace and speak of human rights but the people are no better off.
4. Computers and technology from an ultimate view point of being on the planet are probably not very good. However, we cannot all go back to the land and live like the first peoples did many years ago. This is an ideal because there is just too many people now. It is my hope that we can develop something that is sustainable and fits with the future. Science and technology exist and they are not going away. So what you try to do is in my opinion, is you try to control where it is developing - where it's heading. Over time perhaps we can establish a communications system or society that allows for more equitable communications and sharing not only of ideas but resources. There is a big problem between the North and the South. The North has taken the resources from the South, we understand that, everybody knows that. The trick is to try to make it more equitable. Get the resources back to the South and stop the stealing. Computers are everywhere and they are becoming more powerful and cheaper in cost. Think about other technologies that were used for mass media - radios and such - televisions. Those technologies soon became ubiquitous around the world. But they were mass technology, mass media. It is our hope ( this is one of my big fears because we don't really know ) that this new kind of networking technology is better and more egalitarian - more inclusive of people because it allows individuals to get online and have a say in matters and follow their own interests rather than having a single tube tell you what to think. Everyone can communicate on a more equal basis. So it is my hope that it will change relationships that way. Also, I believe that communications technology if it is used by the people working toward the same goals I'm working towards it will help. So I'm not trying to promote the technology for the sake of technology; I'm trying to promote it for what it can be used to do. In this case after seven years, I have seen many examples of

how it has kept people informed. The jury is still out and history will judge whether or not this type of technology and what we are doing is beneficial in the long run but we need to do something though and I think this is a pretty interesting and valid effort.

5. Q. Two months ago, the global media said that the Venezuelan fishers were killing dolphins. I would like to go online and explain the real version. Can you help me?

A. Yes do you use a computer and modem? There is a conference entitled Dolphin Net

Q. I'm sorry! I don't have a data-line or modem - only bad telephone lines. It is impossible to connect because the telephone lines are very bad.

Q. Are you located in Caracas? There is a group in Caracas called the international League of Journalists - they are online.

A. Pasco tried to put me on line but it was impossible because the telephone lines are so very bad.

6. My major concern is that I see the world going into this new world order telling us that there is new world order information also. You talk about $100,000,000 to spend and $3,000,000 and I feel were are being forced to march to North.

7. Only NGOs who have access to computers and modems can receive the information. This seems to create another kind of elite: those who have access to all the information. What do we do with the one who does not have because of the telephone lines in Venezuela or Sudan?

Q. How do we deal with the notion that now poor people's creative ideas will form a kind of databank of information for people who have free access to it. Will this add to the loss of cultural identity?

A. I feel that indigenous people are more in danger of losing their cultural identity because of technologies like television where they see American actors and actresses performing in elite settings and they want to be that way. Therefore they feel that their own culture and circumstances are not worthy. They don't have the feeling that in society there is solidarity for their own identity. So, in that sense, it would be more beneficial to have connections to the outside world, to other indigenous peoples. One participant here mentioned discovering brothers and sisters in Canada even though they were totally different cultures, but they shared something. Technology helped bring that about: he travelled here in an airplane. I worked to set up a network for Native people at York University at the faculty of Environmental Studies and it did not work out because the Native people later told them that they were an oral culture.

8. I have two little stories and a question - a very practical question. Since you mentioned print, there is a story in Plato that makes it a two thousand-year-old story but probably 2,000 years old before that. Its the story of the inventor Famus and the Thot. Famus came to Thot and said "I have a new invention - writing." He explained the whole thing and what a great invention it was. "I have invented this tool for memory. And Thot thought about it and said "I can see now that people will use this tool to put marks outside of themselves to remember what once they knew inside of themselves." You have not invented a tool for memory, you have invented a tool as a reminder.

Another story from the South Pacific was the story of an anthropologist who took a television to a small island and brought a generator so that they could use the television. The village had never seen an electronic anything was fascinated with this television. And every day and every night the one channel was on and everybody in the village went to watch it. The anthropologist thought that this was interesting. Nobody went to listen to the story teller anymore. However, a few months later the anthropologist came back and the television was nowhere to be seen. He asked where the television was and was told that it was in a corner somewhere. Nobody had used it for a couple of months. He asked "doesn't the television have more stories than your storyteller?" One of the village elders answered: Yes, the television has more stories than our storyteller and knows much more than our storyteller, but our storyteller knows us."

When we allocate all these resources to technology, what are we doing to support friendship? With all of our pedagogies and all of our projects, it comes down to building those relationships across nations, identities, and across the world that lead to friendship. And that is what will sustain us and sustain our work. I have used our technologies for 15 years and I have gone around the world electronically. And that's exciting, really exciting. I just love being able to send a letter to Zimbabwe and get an answer when I wake up in the morning. But it's nothing compared to the travel that I have done to countries around the world, and the experiences that have stayed with me. So when you say there is a $3,000,000 project in Ontario, of that $3,000,000, what portion is being allotted to friendship, to sustainable relationships, bringing people coming together with enough time to get to know each other, share some stories, and go away with a commitment to sending letters back and forth electronically or slowly?

9. My sense is that there is some very sophisticated uses, progressive uses, of this kind of network already among people that we know and have confidence in it. Secondly, even if there are no uses for us it is important for us to know what's happening because other people are talking about it and if we don't understand it we can't take a position and we can't help the people with whom we work take a position if we are not aware. It doesn't mean we should chose to go in or go out. We should decide on the basis of out own priorities, our own context and so forth. If we don't know about it then other people will come in and maybe we will not be as well informed.

10. There is no time for us to be sitting and sending out information to you on the work I do. We don't have the time for something like that. Our priorities are very different because we are at the grassroots. Maybe if it was policy work we were doing and wanted international support it would be a different question. But right now our immediate priorities are to solve certain problems that are happening. I believe as well that this creates a kind of elite. Some would get lost in something like this and it would shift their whole focus. You should be sensitive to something like that.

11. Technology is now linked with everything, not only in terms of institutions and transnationals but in the quality of life for people. In the US there are advertisements for you to stay in hotels with computers in the rooms so you can get the information from your office and program your computer so it can make decisions for you even while you are asleep. That makes me very scared. They are not human beings committed to life. The solidarity movement in Brazil uses it and because they needed it they got more and more money for it and became more sophisticated and eventually couldn't do the things that we needed them to do. It got to the point that they were telling us what to do and finally we told them to go their own way. They were so efficient we couldn't catch up with

them. Those working at the grassroots are isolated from these networks because they have become really expensive and very technologized.

12. We don't all have access to phone lines. Computers haven't gotten cheaper, they have gotten bigger and require more expensive software.
13. Elites are strengthened by technology. Decisions are made by men using technology. How do we resist the parts of technology we don't want.
14. In Brazil there are only 7 women's NGOs that have access to a modem. We don't want to multiply the information in our NGOs. We don't have the people to organize the communications. One NGO has all the information and we share. We need information in Portuguese because everything is in English.

**Report on the International Survey on Transformative Learning**

Following this session Chris Cavanaugh and Leesa Fawcett of York University Environmental Studies gave an update on the International Survey. A copy of the surveys in English, Spanish, French and Portuguese can be found under the section "International Survey" of this report.

Using popular education techniques, Chris began his report with two stories. The first was about a wise woman who, when approached by a young boy's father, waited 17 days to tell his son with diabetes to stop eating sugar. When questioned by the father as to why it had taken her so long she replied that it was because she had to stop eating sugar first.

The second story concerned a master archer who, on returning to his village, found that another expert archer had taken over. He saw bull's eyes everywhere with an arrow exactly in the middle of each target. Furiously he set out to discover who his rival was. He found that the expert archer was in fact a little girl. When he questioned her as to how she had managed to hit the bulls eye every time she shot she replied that it was simple, she simply shot her arrow and then drew circle around the spot where it hit. This story, Chris concluded was about the survey: "We have shot our arrows."

"To date, only 15 responses to the survey have been returned therefore it is difficult to give you much feedback on that small number of responses. However, I have made some observations I would like to share. Five of the responses were from North America, 10 from elsewhere: Sierra Leone, Peru, India, the Philippines. Three of the answers were from India, the largest number from any one country. Interestingly, no one from North America answered the questions on the survey pertaining to information about land and climate. One organisation even put 'not applicable' next to the question. The rest of the world answered this question, sometimes very enthusiastically, as in the case of an Indian organisation who wrote a lengthy answer to these questions.

Some of the key words that appeared in the survey in connection with transformative learning were: grassroots, experiential learning, people's knowledge, action learning, participatory, community, action, etc.

I will concluded by saying that it is difficult to come to any conclusions from the brief answers in the survey."

Chris then put the following question to the group: What use can we make of a directory of success stories and organisations; economically, ideologically, politically? How can it be more widely disseminated?

Leesa Fawcett explained that the Transformative Learning Project saw the directory as a tool for networking, solidarity and information. Some of the participants expressed some ways that the survey could be strengthened and a small group came together to discuss the changes. The survey will reflect thes.

Synthesis of Small Group Discussions and Plenary Session

1. The questionnaire should not be changed. A great deal of work had gone into translating it and it had already been sent to more than 1000 organisations. In addition, a local address had been provided depending on the language because it was more convenient and could work as a tool for networking. People should have a local address, apart from the one on Canada.
2. The survey should be sent to the South American Council and other key organisations so that it can be more widely distributed and promoted. Also, it should perhaps be sent to the Latin American Council for Adult Education (CEAAL) and perhaps other regional adult education associations for dissemination.
3. The language of the survey was defined as being too technical, for example, words like seasonal.
4. The survey should be conducted on an exchange basis and then people would feel more obligated to reply. The survey could be sent with a video, or book or seeds.
5. The survey should or could enable direct connections between grassroots and international organisations. It should not duplicate, but rather meet a need. There could be a preface to the questions saying that the organisation should answer whatever they felt like answering, add more if need be, so that people need not feel threatened in any way.
6. The directory should be designed in such a way as to make it possible to update it from time to time.
7. The directory should include a list of potential funders.
8. In some parts of the world the questions pertaining to soil conditions is difficult to answer because even one field could have different types of soil. Similarly, foods for domestic consumption and export were hard to identify. How were these specifics going to help in an international directory?
9. The directory will provide useful information on similar experiences from similar environments around the world. For example, it is useful to learn about the medicinal properties of the Neem tree, something that is known in India. The directory will be an educative tool.
10. The directory could be a potential employment source.
11. Organizations should be asked what kind of information they require and then the directory should provide that information. Also, the directory should spell out the political dimension, such as the context of growing unemployment.
12. The directory should be sent out to all those organisations who answered the survey and to others as well.
13. The directory should be set in the context of the 21st century and discuss things like GATT and NAFTA. Moema, Marta and Omar agreed that they would look over and

comment on copies of the second draft of the survey.

Discussions on the survey were followed by a group session to identify some key symbols/concepts from the various case studies for transformative learning. The group identified:

1. The Nine seeds (Navdanya): India
2. The Multi-mix Flour: Brazil
3. The 65 Amazon Palms: Venezuelan Amazon
4. The Three Sisters: Six Nations, Canada
5. The Bioshops: Germany
6. The Sesame Cakes (Sigda): Sudan
7. The Medicinal Plants: El Salvador

**Revisiting Transformative Learning Criteria**

The afternoon sessions began with an identification of the two key objectives which would be the central focus of the small group discussions for that afternoon as well as the following day. The objectives were identified as:

a) How to strengthen the learning component of environmental action
b) What are the processes, methods, practices and pedagogies of transformative learning

Based on these two objectives as well as the case study presentations and discussions participants were asked to break into small groups and identify fundamental components of transformative learning that they would take back to their daily work and from each of the case studies.

Summary of Small Group Discussions

Below is a list of the components within each country:

**Sudan**

- Local initiatives: people's strength against war, ethnic violence
- New learning from tragedy
- Traditional/indigenous food
- Women's critical contributions
- New strategies vis-a-vis biodiversity
- Learning how to live within a "hostile" environment
- Subsistence survival
- Taking a stand to keep a lifestyle
- Recognition of the difference between the State's version of Islam and the People's
- Community-based conservation activities
- Understanding of nomadic lifestyle and the environment needed to maintain it
- Subsistence learning

- Problem of desertification created as much by government policies and misdirected investment as by social systems and natural climate
- War leads to severe environmental degradation

**Germany**
- Citizens' action and initiatives
- Community mobilization
- Moving from the single issue of food to the larger issue of agricultural practices
- Focusing on the urban environment and educating urban populations
- Alternative life-styles
- Organic food production in the city
- Change in people's consciousness about food consumption, distribution and production
- Reclaiming, rescuing, awakening urban space for people (not cars) and their food
- Transformation is a change in consciousness and united citizen action for their betterment of their collective lives
- Power of citizen action to bring about change
- Re-visioning urban development and the urban-rural relationship
- Creating healthy cities
- People becoming sustainers rather than consumers
- Creating a sustainable lifestyle

**Six Nations Community, Canada**
- Dynamics of cross-cultural collaboration
- Loss of traditional culture while simultaneously rebuilding the culture
- Breaking stereotypes
- Violent ways of producing food destroy the environment
- Peaceful organic farming
- Growing food teaches patience
- Countries as families who need to live together
- Showing children that agriculture can be a way of life
- Complexity of marketing to suit people and their place
- Bioregionalism
- Reality of world market situations
- Community economic activity
- Recovery of indigenous culture and knowledge
- Important contributions of indigenous peoples to the world of sustainable agricultural development
- Conservation as transformation
- Cooperative and local economy markets
- Use of compatible technology to maintain identify and quality of life
- Respect and protection of mother earth

**Brazil**
- Impacts of a small project on other areas

- Links between production, reproduction and consumption
- Networking
- Dialogue at different levels: Groups that had never met before were meeting now
- Links between hunger, women's rights and environmental issues
- Two elements that lead to environmental degradation: the oppression of women and hunger
- Feminization of the poverty
- Building together and solidarity
- The urban is rural and the rural-urban in a national hunger campaign
- People's involvement and knowledge
- Gender as a central environmental issue
- Understanding the relations between men and women/production and reproduction
- Violent impacts of hunger
- Lack of resources allocated to women even though they are the key ones who sustain society
- Reclaiming urban spaces for community gardens
- Hunger as an agent to change political life

### Venezuelan Amazon

- Many questions and few answers
- Enjoyment of life and role playing
- School as an agent of change
- Realization of diversity of actors and tensions due to diversity of interests
- Complexity and diversity of social processes
- Reclaiming and acting upon people's sleepy knowledge of palm tree uses
- Building trust between different groups and institutions
- Revalidation of indigenous uses of palms
- Form and content are important
- Contribution of observational science to affirmation and expansion of indigenous knowledge
- Community/university cooperation
- Dealing with issue of educative methodologies
- Palm trees as a source of life

### India

- Essential role of women in biodiversity
- Women as keepers of the seeds
- Protection of indigenous knowledge from international patents
- The seed as the cosmos and source of life
- Preserving and storing seeds
- Awareness at the grassroots of the global superstructure impinging upon them
- Assessing and defining sources of oppression
- Absurdity of patenting seeds
- Reproductive rights in plants and women

- Passive non-violent resistance
- Idea of celebration of seeds
- Sharing seeds
- Networking
- Sacredness of life
- In-situ methods to preserve biodiversity
- Fighting patent laws and exploitation of the South by the North
- Extremely dangerous situation of the loss of biodiversity
- Destructive force of bioengineering
- Using traditional and people's knowledge
- Demystifying the scientific paradigm
- Using the specific, the seed, to explain and encompass the entire agro-business and trade system

**El Salvador**

- Impact of neo-liberalism (colonialism), GATT and NAFTA
- Act locally, think globally, think locally, act globally
- Talking to people as people even when they are holding a submachine gun with orders to carry out
- People organizing for power for survival and an effective exercise of power
- Learning survival skills
- Unlearning invisibility and becoming visible
- The basis of transformative learning is in the shaping, joy, friendship, spirituality and quality of life
- Importance of the conservation of water
- Changing patterns of thinking and becoming critical thinkers
- Coping with war and working for peace
- Moving from the passive to the active
- De-mystifying large global structures
- Learning is a process and the learning is in the process

Following this collective sharing session each of the case study writers revisited their case studies, discussing them in the light of the learning that had been highlighted. Had people got the key points in their presentations? What had they missed? They were also asked to reflect on what they learnt from the other case studies. Below are a few of the key points they raised.

Teresa and Moema, Brazil: These two women felt that people had got their central point which was the issue of gender. They noted the similarities between the multi-mix flour in Brazil and the groundnut cake in Sudan.

Marta, El Salvador: The environment consists of not only the physical environment but the spiritual environment as well. The environment is where we live, sleep, work, learn, eat and play.

Naila, Sudan: The main issue in Sudan is desertification. One way of coping is the "sigda" or the sesame cake. There are differences in how the State and the people view Islam. Islam is also misunderstood by the outside world. Sudan is under an economic embargo because it is regarded as a fundamentalist country. There is very little aid from the West. Preserving biodiversity and implementing conservation measures is a challenge in Sudan. The similarity with India is that both the countries are trying to preserve local knowledge. Both Sudan and Brazil are fighting hunger. She also said that she wants to write about the uses of the Neem tree in Arabic.

Elisabeth, Germany: Missing from the feedback on Germany was the notion of the communes in the countryside. There were distinct rural-urban links and changing urban lifestyles could impact rural agricultural patterns. That is, there was a link between the organic food shops in Berlin and the production of organic food in the surrounding countryside.

Omar, Venezuelan Amazon: Brazil has taught me to use a more political approach, to organise a big campaign. He also suggested establishing links between universities in Sudan, India and other tropical countries. "We should break open the university structures," he said.

José, Six Nations, Canada: Communities organizing together for the betterment of their lives.

Vanaja, India: Food security ranged from conservation to consumption. Markets were geared to urban populations. Others were exploited in this system. There was no trickledown effect in India, as was talked about by the economists. We had to think of a new way of living and work and diversify. What I learned from other case studies was that people's strength was what mattered, local, organic initiatives, not science and technology.

### Session on What Constitutes Transformative Learning (May 28)

Participants moved into three groups and brainstormed on the question, what constitutes transformative learning? The group generated information under four categories. Below is an analysis of what was shared in the plenary session.

1. Transformative Learning Techniques used in Environmental Action

- Role playing
- Video forums
- Story telling
- Questionnaires and surveys
- Field work
- Parties, festivals and celebrations
- Workshops
- Cultural exchanges
- Walkathons
- Seed exchanges
- Community gardening
- Popular theatre
- Small group sessions
- Cinema and film
- Study visits
- Interviews
- Songs and music
- Marches and protests
- Participatory research
- Political action
- Round tables
- Reviving traditions

- Promoting history and culture
- Consulting elders

### 2. Transformative Learning Values used in Environmental Action

- Mobilization
- Evaluation
- Concientización
- Building critical thinking
- Planning
- Experience
- Environmental/Nature tours
- Creating our own learning tools
- Building sustainable communities
- Understanding resistance
- Negotiation and consultation
- Seeing learning as a process
- Feminist popular education
- Questioning and changing our practices
- Participation
- Community organization
- Unlearning
- Gardening
- Group work
- Assessment
- Learning by doing
- Coalition building
- Conflict resolution
- Discussions
- Adapting locally
- Creating awareness
- Hunger strikes

### 3. Transformative Learning Materials and/or Tools used in Environmental Action

- Books
- Newspapers and magazines
- Information kits
- Agricultural tools
- Nature itself
- Animals
- Puppets
- Spinning wheels
- Samba
- Audio Cassettes
- Seeds, rice, three sisters, ground nuts
- Flipcharts
- Videos
- Toys
- Posters
- Cartoons
- Computers
- Photographs and slides
- Newsletters
- Blackboards
- Art

### 4. Transformative Learning Practices used in Environmental Action

- Kitchen compost piles
- Popular education
- Networking
- Training
- Community consultation
- Cooking
- Collecting medicinal plants
- Reducing/Reusing/Recycling
- Keeping a journal
- Recovering traditional practices
- Neighbourhood meetings
- Resistance to dominant power
- Reducing consumerism
- Participatory research
- Fundraising
- Setting goals
- Participatory art work
- Meditation
- Planting
- Seed Fairs
- Study groups
- In-situ conservation
- Seed sharing
- Water purification

- Producing learning materials

After all the words and ideas had been assembled on flipchart paper the group noticed that many of the ideas overlapped, that practices were often processes and fed into or out of values.

### Citizen's Treaty for Environmental Education and Sustainable Societies

Moema Viezzer introduced the Citizen's Environmental Education Treaty and asked other members of the group who had participated in its creation to describe the process which was undertaken before, during and after the Rio NGO Forum. Darlene Clover gave a brief explanation of the participatory but difficult process in creating the NGO Treaty on Environmental Education which had provided the context for the Transformative Learning workshop.

"The draft of the Treaty was sent to over 100 adult education organisations around the world in English, French, Spanish and Portuguese. It was then tabled for discussion during the International Journey for Environmental Education at the NGO Forum in Rio de Janeiro, 1992. Apart from the changes suggested by the adult education organisations, small group discussions of the draft at Rio generated further suggestions. What was interesting about the discussions that took place in Rio was the mixture of environmentalists who added their voice to the Treaty. Problems arose because some groups felt that they had worked long and hard on the wording of the Treaty before the Rio event and now others, not involved in the process form the beginning, were changing these words without any consultation. It was a long and difficult task; however, the Treaty has been taken up by many groups for use in literacy classes as well as being the focus of popular theatre initiatives around the world. It has been widely translated and has become an important educational tool."

Omar Ovalles noted that in Venezuela a book had been written about Rio and its impact on adult and popular education.

Moema related the debate to keep or drop the word political in the Treaty. It was finally agreed that two versions would be produced, one with the word and one without. There was much controversy over other words like sustainable, environmental education, global responsibility, etc. The discussions continued even after the Treaty was adopted. It generated a lot of feedback. The Treaty was sent out with the survey.

### Evaluation of the International Workshop

The workshop concluded with an evaluation session around the "Web-of-Life". Each participant held onto a ball of twine and spoke of the experience she/he had during the workshop. The ball is tossed from participant to participant to create a giant spider web.

> I think it will be very important for myself, my life, and my work to revise and disseminate to other groups what I have been learning, listening to and trying to understand from different parts of the world.
>
> The experience has been wonderful for me. It also confirmed many of the things I believe

in. It was nice to have a group of people who think similar things which gives me strength to go on.

I think I have been transformed myself. I learned so many things by being here. As a teacher I'm always aware of new ways of learning. I am definitely going to make use of what I have learned here and tell others about this experience.

I've actually lived in Toronto 27 years. I haven't travelled that much but what I've always known about this building is that people come from everywhere. What happens in these buildings where work is going on is that most people don't really get to know each other. There was a tremendous trust built in this group. I really felt that it was a pleasure I looked forward to. I really appreciated all of the different people and the kind of fondness I developed for everybody as time went on - that you really felt close.

For me this workshop has been a breath of fresh air. It is wonderful to have people who are actually involved in practice. Sometimes it feels that the only reason that people think up theories in the university is so that other people can critique them. So you hear nothing but critique, critique, critique - I have begun to hate that word. It is so negative. This workshop was about people working in very positive ways, very active ways, not sitting down and writing something, but a participatory process. In the university you just sit alone and write books and tell people why their theories are wrong and why they are wrong and how they are wrong. This experience as about telling people why they are right, and how they are right. It is reinforcing the work that people do is positive and not negative.

I think that this has been a very good experience to meet all of you during this long week. I was astonished that we could learn again and again, more and more every day. I was astonished that things you know in abstract manner became more important and concrete.

OISE is like a new place for me because I think I burned out from my work for about 18 years. I decided to look for a new place. I am very pleased to have the chance to be involved in this workshop. This is a new vision. I think this workshop will be a link.

It has been an honour and a privilege to share with people around the world who are concerned about life and love and who are engaged in similar work in an attempt to preserve life. This is basically what struck me the most. And the opportunity to share their experiences.

When I arrived many days ago, I said I had many questions. Now I have some answers to my questions. I also have more questions and more friends.

I'm extremely grateful to those of you who have come from so far away to give time to this process and to be with us. Only some of you knew Moema or Darlene and some of you were not exactly sure how your name was chosen and so forth to participate. So there was a certain small act of faith. Somehow you came. I know how important your work is in your countries and how much people depend on you. So, I very grateful that you came. Thank you very much.

I'm very happy to opportunity to meet all of you. It was very refreshing to meet people from many places. You carried your own energy. You are like a bowl of energy and I can feel that. The room is full of energy thanks to you. You are people with the power to transform - to make changes in this world. Thank you very much for your teaching.

These past few days have reminded me that we have inherited this life from our ancestors. But I don't know whether this generation has acted very responsibly and now we have to pass on this to our youngsters. Sometimes I despair. What are we going to do pass on to the youngsters. I work, of course, with some hope, many times with the kind of despair and pessimism. Where is this leading us all to? But I think being here on this rope has given me a lot of hope and I feel this will have a multiplication effect because there is a lot of work going on across the world. Thank you very much for the solidarity and the kind of community.

When I came in on Tuesday, and people were going around the table introducing themselves, I have to confess to you that I was intimidated by the knowledge, the remarkable life experiences of these people. I was so intimidated, that I wanted to leave because I felt I couldn't possibly make a contribution. Now I consider this to be the most valuable sharing session I have ever attended. In fact, I think this is a course on how to become a better educator. I'm a teacher by choice, so in a way I feel I touched the future. I will leave this room and touch the future in a different manner. I want to thank you all. I'm extremely grateful.

This has been a very stimulating experience, very satisfying and very warm in a less than satisfying and cold world on the whole. It was very holistic because it talked about education activism and also bridging for those of us in academia who are really interested in activism, we sort of feel frustrated and want to connect with the community. There were some very good ideas on that. So it was tremendous. Completely transforming.

Summary of the Written Evaluations

Written comments from participants state that the International Workshop provided:

- space for a mutual understanding of problems
- an effective exchange of ideas and experiences
- a sharing of visions and conclusions
- a better understanding of global environmental education
- a place of encounter to share one's own work and learn from others
- the opportunity to meet others from around the world and realize the similarity in experiences
- to feel the encouragement of the group and mainly the coordinating team.
- a more popular education process should have been used

- there was often not enough time for informal interaction

Certifications of participation and gifts were exchanged among participants. The workshop concluded by singing the Portuguese song "Viver afina um instrumento" and chanting the Sanskrit hymn "Om Santi Santi".

**Key Results of the Workshop:**

- A better understanding of the role of Transformative Learning as it pertains to environmental action;
- Identification of criteria of Transformative Learning through environmental action, and ways of working within this context;
- Evaluation of regional initiatives which centred their learning processes around food production-distribution-consumption and the maintenance of biodiversity;
- Production of a video based on the international workshop;
- A better understanding of the uses/limitations of e-mail as a key networking tool in many parts of the world;
- Key concepts on which to work in the areas of learning, environment, environmental education, environmental action, popular participation;
- The many types of tools and materials used in transformative learning work
- A better understanding of ourselves as educators and the role we play in environmental action initiatives;
- The exchange of simple or popular knowledge that can be modified and applied to similar problems in other parts of the world;
- Collective community actions should be encouraged and strengthened in our work for a sustainable future;
- Awakening sleepy knowledge is vital to community education;
- We can acquire learning through action, especially in rural communities rather than through formal education which can be inaccessible and expensive;
- The concept of transformative learning should be developed or modified as suitable and appropriate in our developing societies;
- Transformative learning is a method used in environmental conservation measures and activities.

SMALL GROUP REFLECTIONS

14h00 (2:00 p.m.) May 24, 1994

## PRELIMINARY DEFINITION OF TRANSFORMATIVE LEARNING

> The study understands transformative learning as a process of learning, whether formal, non-formal or informal which begins with the daily lived experiences of women and men living in communities and is linked to changing the root causes of environmental destruction or damage. Transformative learning relates personal and structural perspectives and seeks understanding of relationships of power and knowledge. It is also concerned with knowing ourselves as a mammalian species trying to live more lightly, cooperatively and creatively in the biosphere. Learning implies dynamic, life-long processes of discovering and re-discovering what we know about nature, and how we live and teach and learn from one another within our differing environments. (From "Transformative Learning Through Environmental Action by Hall and Sullivan, Project Working Paper)

1. What has to be transformed?

2. What does "transformative learning" mean for us?

3. What are the indications, signs, signals, points of evidence that transformative learning is happening in the context of environmental action?

## SMALL GROUPS

14h00 (2:00 p.m.), May 24, 1994

### Group 1

Facilitator: Budd

Naila
Moema
Chris C.

Rapporteur:

### Group 2

Facilitator: Leesa

Omar
Elizabeth
Sandy

Rapporteur:

### Group 3

Facilitator: Ed

Jose
Marta
Lisa

Rapporteur:

### Group 4

Facilitator: Darlene

Tereza
Tony
Vanaja
Veena

Rapporteur:

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Rapporteur:

**Evaluation Form - Transformative Learning Through Environmental Action**

1. What did you like about the workshop?

1- Mutual understanding of problems
2- exchange of ideas & experiences
3- shared visions and conclusions

2. What were some of the limitations of the workshop?

conceptual frameworks (for academics)
- varying standards of preparation

3. What suggestions would you give to the organizers of this event or to popular educators around the world organizing events similar to this one?

- Better representation for countries with environmental problems
- involvement of organizations (NGOs etc rather than persons -

4. Other comments?

- Should be preceded by local workshops or regional ones
- longer time for preparation
- more visits + applied aspects —

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**Evaluation Form - Transformative Learning Through Environmental Action**

1. **What did you like about the workshop?**

Just about everything!! The workshop gave me an opportunity to understand that there are people in the North who are very sensitive. I appreciate the feel that they created a space for many of us to meet and share our work

2. **What were some of the limitations of the workshop?**

Within the given resources, time and energies, I think the organisers did a lot. The groups represented didn't directly work with biodiversity. So it was a little disappointing

3. **What suggestions would you give to the organizers of this event or to popular educators around the world organizing events similar to this one?**

I think Asia was a little under represented. It would have been better to do a little research to identify the groups working on this issue across the world.

4. **Other comments?**

Thanks.

**Evaluation Form - Transformative Learning Through Environmental Action**

1. **What did you like about the workshop?**

- The opportunity to meet another persons coming from different parts of the world. And feel the similarity of the experiences we had been reported.
- The encouragement of the group, and mainly of the coordination team.

2. **What were some of the limitations of the workshop?**

- The space for meetings not healthy.
- To stress the impact of Global New Order and neglect the really transformative that is emerging from our practices.

3. **What suggestions would you give to the organizers of this event or to popular educators around the world organizing events similar to this one?**

- play more. It's an efficient way to learn.
- ~~[illegible] [illegible]~~ strenght the work on small groups.

4. **Other comments?**

It was really a great experience for me to take part of this workshop

Thank you so much!

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## Evaluation Form - Transformative Learning Through Environmental Action

1. What did you like about the workshop?

- Most of all the people. We worked so well together in trust. A group of great people.
- Then there was an excellent development of themes. We went well beyond our expectations

2. What were some of the limitations of the workshop?

Sometimes we tried to put holistic processes into compartments

3. What suggestions would you give to the organizers of this event or to popular educators around the world organizing events similar to this one?

4. Other comments?

**Evaluation Form - Transformative Learning Through Environmental Action**

1. **What did you like about the workshop?** Sharing, reflecting & growing together and with the perspectives of so many regions of the world.

2. **What were some of the limitations of the workshop?**

Language, but also it was an enrichment possibility. Room, needed a better aired place

3. **What suggestions would you give to the organizers of this event or to popular educators around the world organizing events similar to this one?**

To have the meeting outside of an institution to a more open space & share evenings together to use cultural sharing. Watch an appropriate movie together to promote group discussion & [illegible]

4. **Other comments?**

✓ Understand clearly that Learning is a Process and that the learning is in the process.

✓ Concrete follow for cross cultural work & exchanges, as well as ways to lift this experience to other networks.

Marta

**Evaluation Form - Transformative Learning Through Environmental Action**

1. What did you like about the workshop?

All.

2. What were some of the limitations of the workshop?

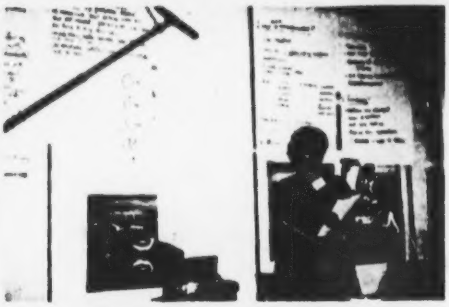
BAD coffee

3. What suggestions would you give to the organizers of this event or to popular educators around the world organizing events similar to this one?

—

4. Other comments?

—



Veena Gokhale

Budd Hall

Omar Ovalles

Moema Viezzer and Teresa Moreira

Elisabeth Meyer-Renschhausen,
Omar Ovalles

Naila Babiker Hijazi, Darlene Elaine Clover

Marta Benavides, Moema Viezzer

Budd Hall, Leesa Fawcett, Ed Sullivan,
Vanaja Ramprasad, Omar Ovalles, Darlene
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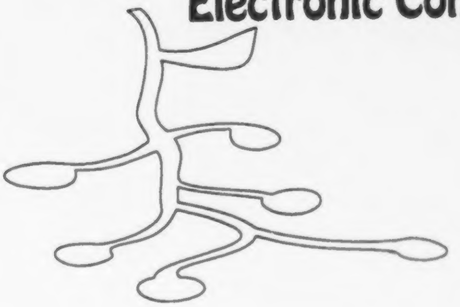
Naila Babiker Hijazi

Teresa Moreira, Omar Ovalles, Tony Biddle

Edmund Sullivan, Jose Zarate,
Marta Benavides



# Electronic Computer Networking

**Electronic Computer Networking (E-mail)**

The Transformative Learning Through Environmental Action research project built in a component to study the use of computer based networks for projects of global scale and computer effectiveness in linking North and South. It was assumed that setting-up an e-mail network would facilitate information sharing internationally.

The installation and documentation of the use of electronic conferencing and e-mail was undertaken by Rory O'Brien of the Web/NIRV Centre in Toronto. Web is the Canadian network while Brazil is served by the Alternex network. Web was initiated to see if it would be possible to communicate each week through the computer. By setting-up this network, the study hoped to link case study writers and project team members, explore obstacles to use by community-based NGOs particularly in the South, identify already existing appropriate bulletin boards or data bases, experiment with using electronic networks as a means of identifying success stories in popular environmental education.

Particular attention was paid to the logistics of getting people connected to the networks, the needs of participants for training and facilitation, as well as to the costs of usage. The outcome of the experiment of an electronic mail system revealed some interesting results. It was discovered that the main obstacles to this type of system as a global communication tool were infrastructure and cost but other elements of social justice were put forward.

In the North, namely Canada, only three of the people involved in the project used the e-mail system regularly. Other members on the project did not because they did not feel confident after only one lesson and/or did not have modems and therefore, could not access the network from their own locations. The system worked unreliably at the Faculty of Environmental Studies. In addition, the "information overload" of the network was overwhelming and the costs were higher than expected.

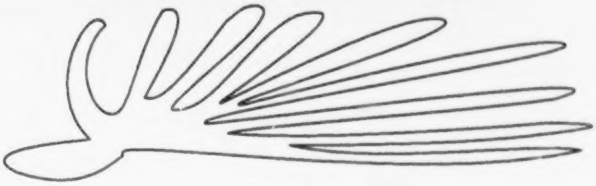
In Brazil, e-mail was not used as a mode of communication for a number of reasons. First, only one computer existed in the office and therefore, it was difficult to book time to use the system. Second, only one person in the office knew how to access the system. Third, the inefficient telephone communication infrastructure could not support the use of e-mail. This was also the case with Venezuela. None of the other case study authors from Germany, India, Sudan, or El Salvador had access to e-mail. In India and El Salvador, the two women case study authors worked in community-based organizations where even paper was scarce.

A lively and intellectually full discussion around the issue of e-mail has been captured in the "Report of the International Workshop" section of this report.

In brief, the key points made by participants were:

1. Computers and modems have not become cheaper. Instead they have become bigger, more complex, non-recyclable and require more expensive software which grassroots organizations cannot afford;
2. Existing infrastructures do not support the use of e-mail as a viable mode of communication in the South;
3. Only NGOs who have access to computers and modems can receive the information which creates another kind of elite: those who have access to the information and those who do not;
4. There is a lack of people capable of organizing communications and able to use this system and therefore, much of the information is duplicated which is inefficient;
5. There is too much information provided by e-mail and the system is still not particularly user friendly;
6. Poor people's creative ideas will form a kind of databank of information for people who have free access to it which could result in a further loss of cultural identity.
7. This type of technology can link different kinds of communities who are unable to get together and strengthen their work;
8. E-mail networks as a way of communicating endanger face-to-face meetings which are so essential to the work of NGOs;
9. Through computer networking it is possible to counter mis-information which has been provided by mass media.

# Video of the Workshop



## The Visual Presentation and the Video

During the *September 1993 planning meeting taking advantage of one of Moema* Viezzer's visits to Toronto, we began to think about how to incorporate the possibility of visual media into the project in a more systematic way. Part of this opportunity was due to the chance arrival as a Doctoral student at OISE of Ms. Amara Pattapinyoboon, a visual media specialist from the Department of Non-Formal Education at the Ministry of Education in Thailand. With leadership of Amara Patapinyoboon visual processes were developed.

### The visual presentation at the opening of the collective analysis

On May 24, 1994 the collective analysis workshop was opened with a public event for about 100 persons in the community. The visual presentation was created to reflect the work in all the countries where case studies came from and to challenge all the viewers to consider their own involvement in transformative learning through environmental action. The visual presentation was also part of the content of the overall workshop as it was an attempt to 'transform' ways of seeing and understanding images.

Two screens were hung back to back from the middle of the room so that persons sat all around the images rather than sitting at one end of a room as is most common. The images were part of us rather than apart from us. Four overhead projectors and four slide projectors were used; two each for the two sides of the screen. The actual images were of two types. A projected silhouette made in shadow puppet style showed a group of indigenous women gathering under desert trees sharing knowledge together was used as a form of title or opening image. Music from the regions of the case studies were being played as well. The second sets of images were colour transparencies produced in the case study project areas. Four images were projected simultaneously, two side-by-side on each of the two back-to-back screens. The overall impact was to create a feeling of stimulation, richness of experience, and movement on a global scale.

### The collective analysis workshop video

In order to make some of the flavour of the workshop available to others who could not be present at the workshop and in order to be able to share the issues raised in the video, IDRC agreed to share the costs of the production with OISE. The video was put together using a five person team that included a producer, a video director, a video editor, a camera person and an audio recorder. The workshop was shot on SVHS tape. Off-line editing was done on VHS dubs with time code windows. On-line editing was done to a 3/4" SP tape. There are two versions: English and Portuguese (sub-titled). VHS dubs in compatible systems were made for delivery to each participant and to interested educators. Twenty two and a half hours of tape was produced.

There were challenges and frustrations in the video process. It was quite difficult to edit 30 minutes from the vast process of the workshop. The workshop itself was a five day process of transformative learning which involved much participation and interaction, many ways to learn and share experience and much contestation and response. The video process required a laying down of elements of the case studies and the discussions in a more or less linear fashion. The co-producers of the video, Amara Pattapinyoboon and Chris Rutherford noted that video was perhaps more archival, more an artifact than a true reflection of the workshop. In the end all of our ways of educating and working came under analysis as we searched for ways to strengthen the transformative nature of the way we educate and learn.

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